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EDITED BY

PHILIP MILLS JONES, M. D.

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## EDITORIAL NOTES

### NEW YEAR—NEW OPPORTUNITIES.

With its three hundred and sixty-five clean, unmarked pages, a new year has come to us to use or abuse; to write things upon them that will endure and be of benefit to the people, to the profession of which we are humble units, to the communities in which we severally live and work and have our influence; or to be left blank, soiled, scrawled upon or smudged. There is enough to do, God knows, in the way of helping ourselves and of helping the people whose needs and ills and sufferings we tend; and we must not forget that in helping ourselves to a better living, to a fuller life, we are helping the people. A physician poor in purse is handicapped to the extent that he cannot provide himself with the proper things of knowledge or material equipment with which to give the best that is in him to his patients. This we should not fail to recognize or to make our patients understand, as we have opportunity from time to time. There is nothing in the world more dangerous than a cheap lawyer except a cheap doctor. Let the new year see you follow more accurate and careful business methods in dealing with the business side of your work; no one respects the man he can defraud or cheapen, and your patients will respect you more for it. Do not let your accounts run for a year or two and then try to collect what you can; send out your bills promptly and after a year of moderate effort to collect, see that the debtor is forced to pay, if he is in a position to do so. Orderliness in business methods will have a beneficial effect upon your professional work, for it will induce more orderly thinking. Also, it will

provide you with more income with which to get books and journals and instruments, or enable you to travel and visit other physicians and see how their work compares with your own; where you fall short and where you go ahead. Above all, do not forget to do your own best work for the benefit of your own county medical society; it will help you and will help every member of the profession and will stimulate a greater respect for the entire profession in your community. Nothing hurts us all so much as rows amongst medical men themselves. A fight between two physicians not only hurts them both, no matter which one is in the right, but it hurts the whole medical profession by belittling its members in the eyes of the community. In every county where you find a good, active, well-knit county medical society, there you will find the medical profession looked up to and respected. There is plenty to be written on these clean pages of this year's new book; will you write something worth while?

### UNION HEALTH DEPARTMENTS.

All over the country cities are engaged in becoming acquainted with themselves by means of efficiency surveys. These surveys have grown out of the perfectly natural desire of the taxpayer to know how his money is being spent, and whether he is getting value received. Wherever these surveys have been instituted, the health department is primarily the one which shows marked weakness in comparison to the other departments of administration. The reason of this is evident. As long as city councils and county boards of supervisors have the impression that the chief functions of a health department are limited to the placarding and fumigation of habitations after certain diseases, and the investigation and removal of the causes of bad smells, so long will the appropriations for health work continue to be inadequate.

The medical profession is largely to blame for this impression. It needs a vision far beyond that of the man trained in curative medicine, to see the intense broad social significance of preventive medicine. Workers for social betterment have long had this vision and forced a tardy recognition on the medical profession. There are many phases of the subject that are slowly slipping from us due to our Rip Van Winkle sleep of a generation past. At the Summer Session of the University of California there was a psychological clinic running without an M. D. degree on the instructing staff. This is only an example of how the broad social preventive fields have escaped our tillage, and their fruits will be garnered by others than the sons of Aesculapius.

There are many reasons why the medical man does not, *ipso facto*, make a good health officer. He is, it is true, good raw material, but he needs much training. First of all, he must be unhampered by a private practice; secondly, he must have the ability to view mankind in the mass rather than as individuals; and finally he must be trained to the new profession. Within the



last few years, non-medical men, trained at the Massachusetts Institute of Technology under Sedgwick, have been making good as health officers in various parts of the country. Now through affiliation with Harvard University in the new School for Health Officers, the Institute will be able to further broaden the viewpoint of its students. These M. I. T. men have done well as health officers because they have been employed on a "full time" basis. Full time may not mean that all of a man's working day is given to the health department, but it does mean that all his time is given to public service, and that the exactions of a private practice can never crowd aside the public welfare.

It is apparent that the small city cannot afford to pay for the services of the "full time" trained health officer. In California we can meet the situation exactly as the educational authorities have done in the formation of union high schools. There can be no objection to the formation of union health districts within the counties. The health officers appointed under this plan would be county deputies for their several districts, as well as health officers for one or more cities within the district. The best feature of this plan is that it could be carried out without another act of legislature.

J. N. F.

#### CIVIL SERVICE AND PUBLIC HEALTH.

When a progressive city sets out to place its administrative offices on a basis of efficiency, the health office is only too often overlooked. It is, therefore, very gratifying to find the City of Oakland reorganizing its health department and placing at its head a Health Director chosen under civil service regulations. It indeed marks a new epoch in the public health work of a city when the administration demands that health officials shall give their entire time to the work and shall be specialists in preventive medicine. When Oakland's plan was first announced the skeptics said, "The salary offered will not hire an able man unless he has the privilege of practicing medicine at the same time," and "How can a Civil Service Commission made up of lawyers and business men choose a Health Director?" The number of applicants from distant parts of the United States showed that there are plenty of men who are eager for public service in preventive medicine even if salaried positions do not offer the financial possibilities of surgery or curative medicine. The Civil Service Commission recognized its limitations better than did the skeptics and appointed an advisory committee to draw up questions, mark answers, and pass upon experience and personal qualifications. This committee consisted of the Secretary of the State Board of Health, the Professor of Sanitary Engineering in the University of California, the Health Officer of Oakland, an Oakland physician, and the Director of the State Hygienic Laboratory. These men were glad to help place the

choice of health officials on a basis of executive ability and expert knowledge. The United States Public Health Service assisted by holding the examination in the eastern states and forwarding the papers.

The Director has the health of a splendid city in his charge and we wish him every success. Chosen on merit, he has our confidence, and we look to him for a constructive and efficient public health administration for Oakland. W. A. S.

#### PUBLIC HEALTH AND INTERFERENCE.

It seems a curious fatality to announce in a special public health number of the JOURNAL the fact that the Secretary of the State Board of Health has resigned his office because of the intolerable interference with his work by some petty-minded laymen who really have nothing to say about it but who have usurped the right to say how every dollar of the money spent by the Board of Health shall be expended. Were it not a matter of the greatest importance to the people of the state, it would be farcical in the extreme. Dr. Snow has for several years served the state as Secretary of the State Board of Health and has served it intelligently and faithfully and well; we certainly are sorry to see him obliged, by such petty and mutton-headed interference, to sever his connection with the health work of the state.

#### EMINENT MEDICAL AUTHORITY.

Most of us have laughed with *Life*. All of us have been disgusted with its malignant attacks on preventive medicine. But once in a while we have the chance to laugh at *Life*. On page 620 of the present volume is published a communication entitled "Rabies: An Exposé," signed by Charles E. Page, M. D., of Boston, which as a monumental mass of ignorant misinformation deserves more than passing attention. Naturally, after reading this stuff, the medical man would like to know the medical qualifications of the writer. The A. M. A. Directory contains the following record:

Page, Chas. E. (b.1840) -N.Y.\* (Y of P) 120 Tremont St., 10-3. We can forgive much ignorance to a man aged 73 who holds his license by virtue of years of practice, and whose medical school or graduation cannot be determined. His opinion ought to be about as valuable, and his scientific information about as accurate as that of the ordinary newspaper reporter at twenty per. In this instance, however, it happens that the newspaper information regarding the isolation of the rabies organism is correct, and the "doctor" is mistaken.

Negri, in 1903, discovered the bodies which bear his name, in the brains of rabid animals. Noguchi, in 1913, has succeeded in isolating these same bodies, or growing them on artificial media outside the animal brains. A little more attention to microbiology in "Dr." Page's reading would have showed him that there was nothing inconsistent in the newspaper statement. Your



true sentimentalist, however, does not weigh evidence, nor search for facts. The opportunity to say something was eagerly seized upon, and *Life* was silly enough to print without investigation. But what can we expect of a man who writes "Pasteur serum"?

As far as the rest of the article is concerned "it is to laugh." We have been bitten by hundreds of mosquitoes and have never had malaria; and (we blush to relate) have had bloody encounters with several fleas without contracting the plague. We have also been bitten by a dog and viewed the bite without apprehension, but that was before some kindfaced tourist from the East dumped a rabid dog into Southern California. At present we are bound to confess that, even if the dog assured us that he had brushed his teeth before biting us, we would hastily pour nitric acid on the bite, and "beat it" for the Pasteur Institute.

J. N. F.

#### SCHOOL OF HYGIENE AND SANITATION.

There exists at present no school of hygiene and sanitation on the Pacific Coast, a lack which we have every reason to believe will soon be supplied by the establishment of such a school in the University of California. The tardiness of the west in recognizing so important a field relating to the health of the public and in organizing an institution for the training of specialists in these lines, is more apparent than real, for the courses in public health given at the University are remarkably comprehensive. Indeed, these courses, which are described in a circular accessible to all who are interested, are so numerous and varied that the subjects making up a curriculum in public health are already quite completely covered. Comparing the number and variety of the courses offered with those in similar departments of eastern universities, we find that the University of California is in no particular behind them, and in some instances has more adequate facilities for instruction. At the present time the university provides instruction in hygiene for three classes of students. First: Students desiring to be taught the elementary principles of health conservation, both individual and public. Second: Students of vocations not directly associated with the conservation of public health, but who would be brought in close relation with some of its aspects. Third: Students desiring a provisional training as bacteriologists, health visitors, sanitary inspectors, or health officers.

For example: from two to five half-year courses are given under each of the following subdivisions: Communicable Diseases; Child Hygiene and Eugenics; Sanitary Engineering; Vital Statistics and Social Economics; Industrial Hygiene; Public Health Laboratory; Sanitary Inspection, and Public Health Administration. The above instruction is given in eleven different departments in the University.

Official recognition of this work as it is now done, executive authorization, and provision for a proper certificate or degree for students finishing

the outlined courses, are really all that is necessary for transforming what is now a curriculum into a veritable school of hygiene and sanitation at the university.

#### VERY IMPORTANT TO YOU!

Two very important and far reaching economic conditions have their beginning this year of 1914. One is the new income tax law and the other is the state "Workmen's Compensation, Insurance and Safety Act," which goes into effect January 1st. In regard to the income tax, every physician should carefully study his own income and more particularly his own expenses. Under the law, expenses necessary for the conduct of one's occupation may be deducted from the gross income; no small part of a physician's expenses are those required by the nature of his occupation and as such are not to be included in his taxable income. The *Journal of the A. M. A.*, in a recent issue, had an excellent editorial on this subject and particularly emphasized the fact that the law will have one good effect upon physicians, at least, for it will force them to be more accurate in the matter of their accounts. It is probably true that a good many doctors do not know either the exact amount of their earnings or the amount they spend as a legitimate cost of doing business. In the smaller towns the office is often in the home; some portion of the rent should be allowed. Some portion or all of the telephone charges, cost of running an automobile, etc., should certainly be charged off as well as books, journals, drugs and supplies, etc., and of course all unpaid accounts. This matter should be given careful thought and accurate accounts should be kept. Care in business methods will secure an increase in the income of any physician and the income tax law will undoubtedly force a more careful and systematic method of keeping the physician's accounts.

#### "SQUEEZE THE DOCTOR" AGAIN!

When commercialism comes into contact with professionalism, it almost invariably wins out. Heretofore we have had to fight commercialism in the shape of contract practice as organized by private enterprise and conducted more or less on the retail plan. With the coming of the "Workmen's Compensation, Insurance and Safety Act," however, we are confronted by commercialism on a wholesale scale and contract practice extended to the limit. The law is very complex and far reaching and it will take some time to find out exactly what it really means in many ways and just how it is going to work out. Some few essential points are pretty clear, however. All employees, except a few classes, must be cared for by the employer in the event of injury by accident and the salary must be paid during forced absence from work. Of course, a considerable number of insurance companies will be in the field to write policies insuring the employer against loss; the employer will pay a certain fee to the company and in the event that any employee is injured or killed, the insurance

company will pay what is required and not the employer. Part of the act makes the state, or its commission, into an insurance company for the purpose of writing this form of insurance, and as the rates of premiums, etc., will probably be about the same with all the companies and the state, it is not necessary to separate the state from the companies in discussing the matter.

The physician is directly interested in this proposition because these accident cases will have to be treated by a physician and he will be paid by an insurance company. Insurance companies are notorious for the small fees they pay for the work they require, and are we to assume that they are going to be any more liberal to the physician under these new conditions than formerly? Hardly. Already they have formulated tentative schedules of fees to be paid and it is a question whether any competent man would do the work for the meager reward offered. This question is of the greatest importance to all of our members and should be taken up at once by every county society in the state. The work is just starting and the time to adjust the matter of fees is right now, at the beginning, and not after it has gone along for some time and a cheap fee schedule has been saddled upon us. The argument is made, and must be considered, that whereas the fees allowed are not up to those generally charged, still the doctor is *always* paid and not just sometimes paid, as when he deals with a patient direct. But is that enough of an argument to satisfy a fee of say \$12.50 for setting a fracture of the arm or leg and a fee of \$1.00 per visit for subsequently treating that fracture? These are about the fees which will be offered, at least for the time being.

Fees will be low because the insurance companies, in order to get the business from the employer, will charge as low a premium as they possibly can—and squeeze the money out of the physicians who will have to do the actual work. It certainly looks very much as though it were going to be the same old insurance game of making the doctor pay the profits instead of making the business man who takes out the insurance pay the doctor what he is justly entitled to and pay the insurance company its profit. The only place where the squeeze can come is in the fees paid out, and we can be mighty sure that the companies will not pay physicians a single dollar more than they are compelled to; at least, they never have!

Another menace is the diverting of patients. Already the companies are getting together staffs of physicians who are to handle all the work for their respective companies. A man is injured at his work and instead of going to his regular physician or to one he might have a preference for, he is sent to the company's contract doctor. How is this going to work out? And do not forget that the state itself is in this game and is going to run the insurance companies pretty hard, therefore making it a competition to keep expenses down—and squeeze the doctor! On the other hand it is being urged that it is the commercial necessity of the insurance company to get the injured person well as soon as possible and therefore they must have thoroughly

competent medical men doing their work. Will it be found that men who are able to give the best of surgical service will do so for the small fees offered?

To allow this new form of contract work to get beyond our control would be a disaster indeed, and unless the physicians in our various county units take the question up at once, it is very probable that in a year or two they will find it thoroughly saddled upon them and with a fixed scale of fees that will be ridiculously low. It was a long, hard fight to get many of the insurance companies to pay a minimum fee of \$5.00 for a life insurance examination. The accident companies have been following a schedule of very small fees for a long time, but the amount of the work has not been very great. Now, however, the work becomes considerable; it is estimated that some 2000 accidents a month will come under this act and a very large percentage of that number will be handled by the insurance companies.

Are we going to calmly accept what some one else is willing to offer or are we going to have a voice in fixing the amount of the fees that shall be paid to us for our services? That is the question, and the sooner we begin to discuss it seriously the better off we shall be in the long run. The actual fee schedule has not been finally determined by the insurance companies and it cannot be fixed for some few months, for it is not known how the act will work out nor how little physicians can be paid; but rest assured of one thing—the physician will be paid the smallest fee that the insurance companies can get him to accept! If all the members of the various county units will stand together in this matter, it is certain that satisfactory fees will be paid and that the financial burden will be placed where it belongs—on the business man employer, and not where the *attempt will certainly be made wrongfully to place it*—on the physician.

#### LOOK OUT FOR THIS MAN.

A young Greek of sallow complexion, with deep-set very black eyes and very dark curly hair, about 5ft. 5 in. in stature, and of somewhat of a hang-dog look on his face is making visits to offices of doctors under the plea of being ill. On one occasion he has complained of appendicitis, on another of having syphilis and of having taken treatment for the latter. After getting the doctor interested in his case, he states that he wishes an operation or a cure but has no money with him. He then, with a very innocent air, states that he has several hundred dollars in a safe deposit box in Sacramento, and if he could get railroad fare to get to Sacramento, he would bring the money next day.

To my definite knowledge, he has collected sums varying from \$3.00 to \$5.00 from four different physicians. The four are willing to be models if the rest of the profession does not suffer. A word to the wise.

Very truly yours,  
WILLIAM C. VOORSANGER, M. D.

ORIGINAL ARTICLES

RABIES IN SAN FRANCISCO WITH NOTES ON SOME RECENT ADDITIONS TO OUR KNOWLEDGE OF THE DISEASE.\*

By R. G. BRODRICK, M. D., Health Officer, San Francisco.

Since the widespread prevalence of rabies has produced numerous articles on the subject, the usual generalities will be omitted and attention directed to a consideration of the subject as indicated by title.

It is now about four years since the beginning of the present epizootic of rabies in California began in Los Angeles. Previous to that time a small outbreak occurred in Los Angeles in 1898,<sup>1</sup> which was suppressed by a muzzling ordinance. A few cases also occurred in 1906 among the animals of the Soldiers' Home near Los Angeles.

Rabies first appeared in San Francisco in October 1911, when one case was reported by a veterinary surgeon. No other cases were reported until February 1912, since which time there has not been a month, hardly a week, in which one or more cases were not reported. From the middle of February 1912, to August 31, 1913, the laboratory of the San Francisco Board of Health has made 546 examinations for rabies, of which 355 were positive. The number and kind of animals affected was as follows:

Human .....	8
Dogs .....	328
Cats .....	11
Goats .....	4
Cows .....	1
Horses .....	2
Calves .....	1

The incidence of rabies by months is shown in the following table:

Month (1912)	Animal		Human	
	Positive	Negative	Positive	Negative
February .....	11	6	—	—
March .....	34	18	1	—
April .....	69	23	1	—
May .....	47	14	—	—
June .....	28	13	1	—
July .....	20	10	1	—
August .....	17	10	—	—
September .....	13	11	—	—
October .....	9	8	—	—
November .....	5	5	1	—
December .....	12	11	—	—
(1913)				
January .....	9	7	—	—
February .....	21	16	1	—
March .....	23	12	—	1
April .....	13	10	—	—
May .....	5	5	2	—
June .....	3	5	—	—
July .....	4	—	—	—
August .....	3	4	—	—
Total .....	346	188	8	1

Beginning in February 1912, the Pasteur treatment for the prevention of rabies has been administered free to suitable cases in the laboratory of

the San Francisco Department of Public Health, the total number treated to date being 187. Dividing this series of bites into two classes, those in which rabies in the biting animal was proved microscopically, and those in which it was not, we have 148 in the first group and 49 in the second. The location of the bite and whether or not cauterized is shown in the table, the number of bites being slightly in excess of the patients because some were bitten in more than one place:

Negri Bodies Demonstrated in the Biting Animal.

Abrasion or contact only.....	13
Head and face.....	8
Upper extremities.....	99
Lower extremities.....	28
Total .....	148
Wounds cauterized.....	61
Wounds not cauterized.....	73
Not recorded.....	11

Total .....	145
Complications:—	
Facial paralysis.....	1
Deaths from rabies.....	3

Total treated..... 187

Negri Bodies Not Demonstrated in the Biting Animal.

Abrasion or contact only.....	2
Head and face.....	3
Upper extremities.....	25
Lower extremities.....	17
Breast .....	1
Back .....	1
Wounds cauterized.....	49
Wounds not cauterized.....	36
Not recorded.....	10
	3
	49

Complications, none.

Nine cases of human rabies, all resulting fatally, have been observed in San Francisco, three of which had received the Pasteur treatment. Two of these cases, occurring early in our series, were old men and received the mild scheme of treatment. One showed symptoms of rabies on the eighteenth day of treatment, too early for any immunity to have been established, and the other developed symptoms four days after having completed the treatment. A consideration of the case histories of this series of nine cases shows that in those who had received the Pasteur treatment, the course of the disease was much milder and prolonged than in the untreated cases. The histories of two of the cases are here given as being representative, as well as illustrating the modifying effects of treatment.

Case 9. J. B., child, age 4 years, resided with her parents in this city, where they were visiting, their permanent residence being in the East.

The child was bitten on April 25th by a dog, who also bit another child, a cat and a horse. The dog was taken to the pound where it died April 26th and was examined at this laboratory, Negri bodies being found. The bite, a very severe one of the face about an inch below the right eye, was cauterized within half an hour by Dr. Garlick. The child was placed under the Pasteur treatment within 24 hours with fresh virus from the State

\* Read before the Fifth Annual Conference of State, County, and Municipal Health Officials, Venice, October 6 to 11, 1913.



Hygienic Laboratory, the intensive scheme of the U. S. Hygienic Laboratory being followed. The course of treatment was uneventful, being completed on May 16th. On May 20th, four days after the completion of the treatment, she became ill, the principal symptom being fever, and was removed to the Hahnemann Hospital on May 23d.

Symptoms and course of the disease: Friday, May 23rd, the temperature was 103.6 degrees at 3:30 p. m. and 105.2 degrees at 8:30. Patient was restless and nervous, slept at intervals and took both milk and water. May 24th—the temperature was 104.6 degrees at 6 a. m., 104.2 degrees at 9, 103.6 degrees at 12, 100 degrees at 6 p. m. Respiration around 34. Took water and milk in small quantities and at frequent intervals. Slept frequently but would often start up suddenly, limbs twitching. Very restless most of the time. Perspiring freely at noon. In the afternoon complained of headache but rested more quietly.

May 25th—The temperature ranged from 106.6 degrees in the morning to 105.8 degrees in the evening; respiration 40 to 56, pulse around 130. Patient slept very little, was restless, moaning occasionally and had twitching of face and limbs. Was given small quantities of liquids, but at about 11 p. m. showed marked distress upon attempting to swallow.

May 26th—Temperature 105.2 degrees at 2 a. m.; involuntary bowel movement. A little later rigidity of the right side was noticed. At about 5:30 she had a series of convulsions and died at 5:40 a. m.

The autopsy held at 11 a. m. of the 26th showed the meninges of the brain to be very markedly congested. The base of the left lung was consolidated and areas of consolidation were observed in the right lung. Five or six ounces of turbid reddish fluid were present in each pleural cavity. A large hemorrhagic area was found in the lower lobe of the left lung.

A microscopic examination of slides prepared from the hippocampus, showed presence of Negri bodies, typical in appearance though smaller than usual.

A rabbit inoculated subdurally on the 27th of May remained well until June 8th when paralysis began to develop. On June 10th paralysis being marked, the rabbit was chloroformed and the brain examined, disclosing presence of numerous Negri bodies, thus establishing the already determined clinical diagnosis of rabies.

The course of this case demonstrates that in a severe bite, close to the central nervous system, the Pasteur treatment may be ineffective, probably for two reasons. One is the fact that from the location of the bite, the incubation period may be so short that full immunity is not established before it is time for the symptoms to appear, and the other is that the amount of virus injected by the bite may exceed the minimum lethal dose, against which the treatment is capable of protecting.

The length of time the child lived after the onset of symptoms and also the comparative mildness of the symptoms would seem to confirm the opinion formed by the observation of previous similar cases, that the Pasteur treatment in those cases in which it is ineffective, modifies the course of the disease greatly, saving the patient much suffering.

Case No. 4. J. R., male, age 50 years, residing in the Mission. Was taken sick on July 15th, when he came home from work complaining of pains in his left arm and shoulder and in the

left side of his chest. The next day he went to work again but looked and felt sick. On the 17th Dr. J. W. Gunn, Jr., was called. The patient related that about six weeks before he had been given a puppy, three months old. A week later the dog became sick; nose dry; breathed heavily and drooled at the mouth. The next day it was noisy and whined a good deal. Its eyes were inflamed and it fell down at times while running about the house. On the first day of its sickness it bit J. R.'s wife superficially without drawing any blood. On the third day of its sickness it bit J. R. on the left thumb; a very slight wound. The next day the dog died, after the successful operation of some "worm medicine."

On the morning of the 19th the patient found that he could not swallow and began to complain of spasms in his abdomen whenever he tried to move about. His breathing became irregular and difficult. When shown fluids he tried to get away even to the extent of trying to get out of bed. His temperature was 99.6 degrees and pulse 106. A physical examination by Dr. Gunn was negative except for a slight heart murmur. About 5 p. m. the patient was seen by Drs. Brodrick, Kellogg, Gunn and Sawyer.

At this time great agitation and dyspnea was produced by any slight exertion and by attempting to drink. He was rational and upon request attempted to drink some milk. He succeeded in getting some down after great effort. He was unable to explain his apparent inability to drink and his fear. Knee jerk was slightly exaggerated. Pupils equal in size and slightly dilated; slight reflex to light. That night a male nurse was in attendance. During the night the patient did not sleep and was very talkative, at one time telling the nurse that he did not feel sick at all but felt excited as though he was slightly under the influence of alcohol.

Toward morning he began to get delirious, finally becoming so violent that chloroform was necessary at times to restrain him. He became so violently delirious and his convulsive seizures so frequent that he was kept under the influence of chloroform a large part of the time, on the 20th. On this day Drs. Brodrick, Sawyer, Kellogg and Gunn saw him again at about 4 p. m.

The anesthetic having been eased up a little the patient thrashed wildly about, salivation was marked, the throat filled with mucous; and the suffering appeared to be intense. He died at 5:20 p. m. of this day.

Autopsy. Body of a well developed, well nourished male about 50 years of age; post mortem lividity marked on extremities and dependent portions of the body; on the lower limbs are scattered deep purple raised areas about 3 mm. in diameter.

Appendix normal, no fluid in pelvic cavity; peritoneum normal, no fluid in pleural cavities. Pericardium normal, contains about 3 cc. of clear brownish fluid. Left ventricle filled with semi-fluid blood. Ventricle wall normal in thickness, somewhat paler than normal; valves normal. Areas of yellowish deposit throughout intima of aorta. Mitral valves and coronary arteries normal.

Lungs: Left lung crepitates throughout; abundant bloody fluid mixed with air exudes on incision, especially at base. Right lung free, few easily broken down adhesions at apex, otherwise same as left. Marked congestion of larger bronchi.

Spleen small, capsule wrinkled, normal color, pulp soft.

Kidneys, renal fat abundant; left kidney shows a few sub-capsular hemorrhages; cortex thin, capsule strips readily. Right kidney smaller than left, capsule strips, surface cyanotic.

Liver: Gallbladder larger than normal and distended with clear dark bile. Liver normal in size,

mottled appearance, edges sharp, cuts readily, nutmeg appearance. Surface dull yellowish brown with areas of lighter color.

Pelvic organs normal. Bladder contains large amount of turbid urine. Bladder wall smooth.

Brain: Vessels of pia intensely congested; no serous exudations, no adhesions.

Specimens of hippocampus major taken for bacteriological examination.

Stained smears made from the hippocampus did not disclose the presence of any Negri bodies, so rabbits and guinea pigs were inoculated with the material.

The result of these inoculations was positive for rabies, the animals dying of typical symptoms and Negri bodies being demonstrated in the brains.

In attempting to rid the city of rabies, the health authorities have been very much handicapped by the apathy of the general public and the determined objections of misguided individuals who believe they have the best interests of their pets at heart when they fight the enforcement of muzzling laws. An ordinance was adopted by the Board of Supervisors on March 20, 1912, requiring all dogs running at large to be muzzled, but exempting those being led by a rope or chain.

This ordinance was never enforced with any great vigor and expired on July 1, 1912, but was re-enacted on July 3, 1912, expiring on December 31, 1912, since which time no muzzling ordinance has been in effect.

The efforts of the city pound in destroying stray dogs and cats has undoubtedly been of greater value than any one measure, not even excepting the attempted education of dog owners by the distribution of circulars of information.

The number of animals destroyed at the pound during the first six months of 1912 was 4,440 dogs and 1,841 cats. During the second six months the dogs killed were 2,919 and the cats 2,293. For 1913 the figures of the eight months elapsed are dogs 3,528 and cats 3,537.

Hitherto in the discussion of rabies we have had two great epochs to refer to: the first was the discovery of Pasteur that immunity could be established during the incubation period by the inoculation of modified virus, prepared by drying the spinal cord of rabbits, dead of rabies, for varying periods, the longer the drying, the weaker the virus.

The second epoch was the discovery by Negri of characteristic bodies in the brain cells of rabid animals, which bodies are now universally accepted as the parasitic cause of the disease.

As the result of developments of the last few months, we are now able to add two more landmarks in the history of rabies: one is the announcement of Moon<sup>2</sup> of some successful experiments in the treatment of rabies by quinine, and the other is the announcement of Noguchi<sup>3</sup> of a method of cultivating the negri bodies.

The preventive treatment of rabies as introduced by Pasteur has been modified very little in the passage of the years. The use of fourteen day cord or any cord older than eight days has been abandoned by most laboratories. Also most authorities are now using one and two day cords, whereas

Pasteur stopped at three days. Many different schemes of immunization have been tried, the most prominent of which are those of Högyes and Ferran. Högyes uses a dilution of fresh fixed virus in the belief that the drying process of the Pasteur method is in reality a dilution through the destruction of some of the organisms, and that his method of diluting the fixed virus gives a more accurate dosage. His results are good, more than 10,000 cases having been treated by his method.

Ferran's method is similar and relies upon a dilution of fresh fixed virus.

Other schemes have been tried, such as partial digestion of the fixed virus, attenuation by heat, mechanical disintegration, treatment with carbolic acid, glycerine, etc. On account of the more widespread and longer use of the Pasteur method, some form of that method is still the most popular. According to Remlinger<sup>4</sup> it had been used previous to 1907 in 131,579 cases with 549 deaths occurring more than fifteen days after the completion of the treatment.

More recently Harris<sup>5</sup> advocates the use of fixed virus, treated by freezing with carbon dioxide snow and drying in vacuo at -15 to -18 degree C. This method it is claimed has the advantage of both the Pasteur and Högyes methods in that it is as safe as the Pasteur and lends itself to a more accurate as well as a larger dosage as does the Högyes.

#### TREATMENT OF RABIES.

From time immemorial the treatment of rabies has been the subject of the wildest empiricism and superstition. Every drug has been recommended as well as weird and disgusting mixtures that would shame a practitioner of the Chinese school. Frederick the Great's law, requiring the operation for the removal of the "mad worm" from the tongues of all dogs and his emulsions of "mad worms in honey," are classic examples. In our own time the celebrated "mad stone," a calculus obtained from the intestinal canal of some of the domestic animals, has been held in high esteem by the laity. The reason for the persistence of these superstitions for any length of time is the fact that only one person out of six bitten by rabid animals develops the disease, even though untreated.

Excepting for the recent quinine treatment now to be described, we have no drugs that are of any avail whatever once the disease has developed in man, and it has been invariably fatal. Immune serum has been prepared from the blood of sheep immunized to rabies, and while it has some protecting power, it has never succeeded in saving a life. It has been used by Marie in the protective inoculation of bitten persons by mixing it with a larger dose than usual of fixed virus, thus hastening the development of immunity in cases presumed to have a short period of incubation.

Chloral and morphine may be used to quiet the spasms and to render the sufferer more comfortable, and chloroform should always be used for the paroxysms.

The quinine treatment before referred to promises to be a real specific. Reasoning from the sup-

position that the parasite of rabies is of protozoan nature, and from the success attained in the treatment by drugs of other infectious diseases of the same class, notably malaria, syphilis, sleeping sickness, etc., Moon of Chicago performed some experiments on dogs with quinine. The dogs were inoculated with an emulsion of rabid brain material by injecting with a needle a few drops in and around the ulnar nerve at the bend of the elbow, or the animal was anesthetized and the needle inserted below the eyeball and through the optic foramen, directly into the optic tract. When active symptoms of rabies developed, the animal was given a large dose of quinine sulphate in capsules stitched up in a piece of tough meat which would be swallowed whole. When the dog was unable to swallow the same was given hypodermically. The daily amount given was 1 to 1.6 grams in three doses to a dog weighing 6 or 7 kilo., an amount that would be equal to 12 to 18 grams daily for an average man. In each experiment a control dog, inoculated at the same time, was allowed to go without treatment. Three different experiments were made at different periods. Of the three dogs treated, two were alive and well at the time of writing, one about five months and the other a year after treatment. The third dog died of obscure causes two and one-half months after treatment. All of the control animals died with typical rabies.

Having observed in a recent newspaper dispatch an account of a case of human rabies in St. Louis treated by quinine, a letter was addressed to Dr. Harris, City Bacteriologist, who replied stating such to be the fact; that he had given the patient, clinically diagnosed as rabies, intravenous injections of 15 grain doses of bimuriate of quinine and urea, five doses in all being administered. The patient recovered.

This quinine treatment of rabies is so simple and so promising that a knowledge of it should be diffused by health officers throughout the country, so that no one suffering from this otherwise most certainly fatal disease will be denied the opportunity of a trial.

The cultivation of the Negri body by Noguchi is the final link in the chain of proof that rabies is a distinct infectious disease, and that the Negri body found in the brains of rabid animals is the specific parasitic cause of the disease. It disposes finally of doubt in the minds of a few ultra-conservatives on the nature of the Negri bodies, as all the postulates of Koch have been fulfilled to the letter. Noguchi's method was similar to one already described by him for the cultivation of the spirochete of relapsing fever.

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### POINTS REGARDING TUBERCULOSIS OF INTEREST TO HEALTH OFFICERS.\*

By ROBERT A. PEERS, M. D., Health Officer, Colfax.

When asked to present a paper before your body it seemed to me that it might be of some value to you if I should speak upon the subject as shown on the program, namely: Points Regarding Tuberculosis of Interest to Health Officers. Theoretically, that presented a subject very appropriate for the occasion. Practically, when I came to prepare my paper I asked myself, "What is there about tuberculosis of interest to the health officer that is not of interest to the public individually and collectively?" And indeed, anything intimately concerned with the control of the morbidity and mortality of the people, in order that we may attain the highest efficiency and achieve the most far-reaching results in matters pertaining to public health, must be made subject of very careful study by the layman as well as by the officially designated health officer. When that millennium arrives we may hope to conquer and wipe out all infectious diseases. In practice, however, the health officer, as the representative of the people, the one upon whose individual shoulders is thrust the collective burden of the community, is the one who does the work.

Tuberculosis is of interest to the health officer primarily as an infectious disease accountable for the mortality of one in seven of his community, of his family and of his friends. More than that it infects probably five out of the remaining six-sevenths at some period during the lifetime of the individuals comprising that number. It is the duty of the health officer to prevent the occurrence of disease or, when it occurs, to limit its spread. The reason for his existence is the prevention of morbidity and mortality. Granted that this is the reason for his appointment, it seems reasonable to suppose that those diseases causing the greatest morbidity and the greatest mortality, those diseases that work ceaselessly and relentlessly—claiming their victims with regularity and precision, would receive the greatest amount of attention and demand the greatest efforts at prevention. Is it so? Theoretically, fine; practically, it works the other way. A case of smallpox occurs—there is quarantine or isolation, vaccination of contacts, reports to the State Board of Health, exclusion from school of unvaccinated children. A few cases of diphtheria or scarlet fever make their appearance—there is quarantine or isolation, search for carriers, cultures taken from noses and throats, schools, theaters and other such places closed to children and even to adults. Money is no object, inconvenience is not considered, the demand for a clean bill of health is paramount. A case of typhoid is discovered and a diligent effort is made to discover the source of contagion and by destruction of excreta and exclusion of flies to prevent the spread of the disease. What happens when a case of tuberculosis is found? Nothing. The health of-

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ficer most likely never even hears of it. If he does, what does he do? Nothing—Does he look for other cases in the family? Does he give instruction about the disposal of sputum? Does he tell each patient to hold a cloth in front of his mouth when he coughs? Does he look for the source of contagion—for a tuberculosis carrier or active cases of tuberculosis? Does he do any or all of these things he knows will help to limit the spread of tuberculosis? No—except on rare occasions. Perhaps it is because tuberculosis is of very little moment compared with the other diseases named. It cannot be. In 1911 smallpox caused in California the deaths of nine people, scarlet fever 81 people, diphtheria and croup 167 or 0.5% of the mortality, typhoid 444 people or 1.3%, tuberculosis 5114 people or 15%. If a business man ran his business in that manner, spending all his time looking after the little leaks and overlooking a leak that sooner or later swallowed up one-seventh of his principal and one-seventh of his profit he would soon be bankrupt and were it not for our great natural resistance we would soon all be bankrupt in health. There must be reasons then for this, to me, marvelous indifference. I think these reasons are—first, lack of the spectacular; second, the recent complete change in our ideas about tuberculosis.

There is nothing spectacular about tuberculosis either in its inception, its course, or its victory. It is not ushered in by a chill, a rapid rise of temperature and the occurrence of a scarlet or a pustular rash, it does not sweep through a community in a few weeks leaving a trail of death nor is its victory signaled by the sudden cutting down of its victim in the midst of health. Rather is its onset insidious, the patient unable to tell when he first began to have the tired feeling and to experience the lack of ambition which constitutes the first evidences of the deleterious effect upon the body of the absorption of the tuberculosis proteid. Rather is its march one of stealth, taking here one and there one, but so quietly and unobtrusively that only by the reading of statistics can one appreciate its deadly power. Even in its victory there is nothing of the spectacular, the victim having for so long been a sufferer that his death arouses but little comment. It is the lack of the unusual and the occurrence of the commonplace that fails to attract attention or blunts the sensibilities of the public.

Again it is but a generation since our entire conception of the etiology of tuberculosis has undergone a complete change. From our understanding of tuberculosis as a disease that was hereditary, non-preventable, and incurable—in the course of a few years we have come to look upon it not as hereditary but as infectious, not a non-preventable affliction but a preventable disgrace, not an incurable but one of the most curable of diseases. I say our conception of the disease has been changed; I should say the conception of the thinking and reading portion of the people, which constitutes but a small percentage. The large percentage who let others do their thinking and

reading are only now beginning to grasp the essentials. But the awakening has come and the results will soon follow in the way of aroused interest, demands of more effectual campaigns with the appropriations necessary to wage the fight. Heretofore we have been handicapped by following many theories that have turned out to be merely half-truths and the over-enthusiasm of the few has in some instances turned to a feeling of helplessness of defeat.

To conquer a disease it is first necessary to know the cause and the manner in which it is spread. The cause we know—the tubercle bacillus—a minute vegetable organism. The manner of its spread we can more than surmise. To those who have most to do with tuberculosis it is becoming more and more apparent that the principal cause of the infection of man is man. I do not wish to unduly underestimate the spread of tuberculosis by the milk of tuberculous cows but I think that infection from this source is of minor importance when compared with the infection of human by human. Tuberculosis is a much more prevalent disease than is dreamed by the average citizen or even by the average physician. Show me a case of tuberculosis and I will find for you evidence of two, three, four, or five cases in the same family, cases latent, cases active, and cases cured. Just as you have your diphtheria and typhoid carriers just, so surely, I believe, do you have your tuberculosis carriers, individuals suffering from tuberculosis whose resisting power has not yet broken down or whose body has built up an immunity that protects it from the ravages of the tubercle bacillus and either of these two types can and does spread the disease. Such individuals have their bad spells and are treated at various times for chronic bronchitis, malaria, atypical typhoid, pleurisy, atypical pneumonia, catarrh, stomach trouble, throat troubles, asthma, liver trouble and a score of other diseases. A proper diagnosis with proper instructions faithfully carried out would eliminate these individuals as infective agents. I believe it is the contact with these individuals, principally in their own homes, that is responsible for the spread of a large percentage of tuberculosis. We have been treating only the terminal stages of a protean disease that by its many disguises and because of our past ignorance has deceived the medical profession and continues to flourish in spite of our efforts to stop the spread. And before we can stop the spread of tuberculosis we must again unlearn some of the fallacies that have been and are yet accepted as truths by the public. We must have as health officers men who are as able to detect and diagnose cases of tuberculosis, atypical cases, as they are to-day to detect carriers of diphtheria. We must make the health officer, the physician and the layman appreciate the significance of a cough, when prolonged or when associated with fever, sweats, loss of weight, a tired feeling and malaise. We must learn that spitting into the gutter by the tuberculous, or even on the sidewalk or in cars, providing the sputum is reached by sunlight and fresh

air, is not nearly as dangerous as living with a patient with so-called chronic bronchitis, or with the thin man who has stomach trouble and clears his throat. Forget about the infection that was supposed to come from inhalations or swallowing of dust from the street and remember that personal contact, particularly in the family, is the great source of infection. When the world appreciates that three out of four of the so-called delicate people are delicate because they have tubercle bacilli concealed about their persons unknown to them, then will we begin to get some action that will go a long way toward the solution of the problem.

In conclusion let me urge that, as health officers, we more actively fight the greatest of all diseases—that we pay at least as much attention to it as to some of the more virulent and rapidly fatal diseases. To do this we must prepare the people—we must preach to them the things we know. Preach cleanliness, personal cleanliness—the cleanliness that demands clean hands before eating, separate eating and drinking utensils, separate beds—the cleanliness that demands the destruction of sputum or its expectoration in the gutter—that requires a cloth held in front of the mouth during coughing. Preach cleanliness because tuberculosis is a filth disease. Preach fresh air and sunlight—fresh air for the baby, for the school child, for the worker, for everyone—and sunlight to bathe the nursery, the bedroom, the living room, the school room, the workshop, the office, for tuberculosis is a disease of impure air and darkness. Preach pure food, good food and plenty of it, for tuberculosis is a disease of insufficient and improper feeding. Preach sufficient rest for the scholar, for the artisan, the clerk, and the laborer, for tuberculosis is a disease of over-work. When you have preached these things long enough and earnestly enough you will find that the demand will become great for well-ventilated buildings, for proper working houses and proper food. Then, with the knowledge we have and the increased skill in diagnosis we possess, we can hasten the time when tuberculosis will be but another of the diseases conquered by the medical health officer.

#### THE RELATION OF THE SANITARIAN TO VOCATIONAL GUIDANCE.\*

By WM. SIMPSON, M. D., Health Officer of Santa Clara County, San Jose.

Every sanitarian, and particularly every health officer, must be an instructor and, as such, interested either for or against every educational movement. He must be for such movements as favor the physical development of the race which is the health officials' especial care. He must be against those which take from the boy or girl the full measure of growth to which each is entitled.

Thus far the boy has never been sized up by anybody but himself. No university graduates the

girl in the knowledge of the duties and pleasures of motherhood, the one employment man can never take from her, and which she is taught to fear rather than welcome. Can we help these boys and girls to know their abilities and opportunities, or must they still blunder along and take their chances? Vocational guidance attempts to show the boy and girl how to grasp the opportunity and how to escape the blunders.

This is not the trade school masquerading under a new name, nor is it limited in its scope, but includes all possible types of vocational activity, professional, industrial, commercial. Its prime object is to ascertain the natural inclination of the child and fit him for his place in the community in which he is to exist, not as a parasite, not as an idler, but as a happy and willing doer of those things in which he is most interested, and the reward of whose work well done, shall be more work to be better done, work which shall afford him a competent reward, but for which the real reward shall be the joy of accomplishment. Teach him that money for work is a legitimate reward, but that work simply for money is drudgery of the lowest type.

Vocational guidance must face its problems from two standpoints. First, individual, which must consider mental and physical limitations; second, communal, which must take into account social and economic conditions. In each of these the sanitarian, be he physician or layman, is vitally interested. The health officer as a social servant owes his influence to all movements for the betterment of the community in which he works, and the personal welfare of the children should always be his special care. Vocational guidance originated in Boston where it was first developed for poor boys by Professor Parsons of the Civic Service House, who soon found it was needed by all boys, and now, when so many are co-workers, by all girls as well. It was later taken up and developed in New York, Cleveland and many other cities. It means an attempt to conserve *human resources*. Just now the whole world is alive to the conservation of material resources, water, coal, forests, in short anything which adds to the material comfort of the race. How much more important the conservation of human resources, the providing for each individual an occupation suited to his mental and physical limitations, and equal to his highest possibilities. An occupation which will give to him not only a material support, but which will satisfy his ambition, whether it be for money, fame, or any return which seems desirable, and for which he is willing to strive. No person ever achieved anything worth while in an occupation of which he was ashamed, or for which he had a dislike. The lack of knowledge of just what he was fitted for and the pressure of environment force many into work for which they have no liking, and hence no adaptation, and there they grow up discontented, disappointed individuals, the proverbial square peg in the round hole, and unless they have unusually happy dispositions they are apt to become pro-

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moters of discord from whose ranks are recruited the soap box orators.

Let us then as sanitarians and medical officers learn the viewpoint of the educators, and give them our help in determining the physical abilities of the youth for their life work, for the subject naturally separates itself into two divisions, the mental and physical. The mental may, perhaps, properly be relegated to the teacher and the psychologist, but, surely the condition of the individual, and the conditions under which he is to work are the problems of the physician. Hours of labor, child labor, ventilation, lighting, heating (which often means "cooling"), crowding, are all receiving attention, but much is yet to be desired, and much remains to be done, and the fitness of the child for the occupation to which it is either forced or inclined should be determined by qualified examiners, for not only its future comfort, but even the very life of the individual may be at stake.

For example, no child whose physical condition is below par, should be allowed to engage in mining, metal working, stone cutting, glass cutting, occupations which are known to develop occupational diseases, and to which only well developed vigorous persons should be apprenticed. Individuals who have any suspicion of tubercular taint must be guided away from all sedentary occupations. For them, stenography, typewriting, typesetting, the telephone exchange, factory work, desk work, should be forbidden and such pursuits chosen as require exercise and fresh air. Unless the vision is perfect or can be made so by glasses, the multi-graph and the adding machine, the sewing machine and all forms of lace making and embroidery, coloring and retouching photographs will prove disappointing and unsatisfactory. This is particularly true of such individuals as have different vision for each eye, as these will always suffer more or less from eye strain. It is hardly necessary to specify the occupations which are closed to defective hearing, they will suggest themselves.

Corporations controlling large interests are learning that it is economy to spend money to ascertain and insure the competency of those who are to become employees before giving them positions. At its office in lower Broadway in New York the Standard Oil Company conducts a school for applicants for positions, paying them a salary during their three months' course, teaching them, not only everything about oil from the well to the consumer, but in the case of salesmen, how to live and conduct themselves to gain and retain the confidence and respect of the customer. An examination and thesis completes the course, which if successfully accomplished by the student insures him a three years' contract, his salary graduating itself to the measure of ability shown. This system enables them to select the proper peg for the proper hole, one student developing as a refiner, another for the lubricating oils, another for the sales department, and each assigned where his talent directs, and no minus sufficient preliminary education can take the course.

Without special training, observation on the part of the teacher will show which boy is a trader and should be guided into commercial life, which is a student and should be guided toward a literary or professional career, or which is mechanical and should be guided toward the use of his hands.

If mechanical, then a special study must be made, first, of the community and the class of mechanical employment possible, and second of the student and his deftness which will show whether he is adapted to fine work, such as jewelry, art glass, cutlery, or wood working, electrical engineering, a work which requires judgment and caution, or for the girls, color sense for designing and the artistic trades, a quick ear and eye and the gift of attention and exactness for office employment, in short, individual study of each which should mean for the teacher smaller classes and more time for personal study of the members of the class.

Shall we not consider that the time is past when the student is fed to a machine, however perfect, and each one shaped to an exact likeness of every other one as shown by his ability to answer the same set of questions?

The teacher should be able to recognize physical defects, particularly adenoids, mouth breathing, defects, even slight, of sight and hearing, not from an examination, but from the appearance, positions taken by the students at their desks, and in their classes, and should know the relations of these defects to mental deficiencies, and it goes without saying that what is true of the teacher is many times over more important to the health officer. His faculty of observation should be so cultivated that the first time in the school room by simply glancing over the class he can place the majority of the defectives. A demonstration of this to a class will inspire confidence and make it much easier to secure individual examinations of the entire class if thought desirable.

Then further, both the teacher and sanitarian must know the general disposition of the population as to vocations, as to the country in general, which he can obtain from the U. S. Statistical Reports, and particularly for his own locality. For example, the occupations of the Santa Clara Valley at present are agricultural pursuits 3054, professional service 1784, domestic and personal service 5017, trade and transportation 5819, manufacturing and mechanical 3650. It is obvious that in that valley the children must be guided toward these vocations until such time as there is an interchange over the whole country showing just where pupils showing aptitude for certain things can be guided not only to the choice, but to the location where that choice can be successfully followed.

The California climate is exceptionally well adapted to the development of both mental and physical defectives, as it offers so much pleasant out-of-door employment both for boys and girls. The cultivation of flowers, first, for the florist, second, for the seed grower or for the perfumer, has never been given the attention it deserves, and is



both a fit and healthful employment for the boy or girl of low vitality who promises to become tubercular. Curiosity and love of color are often characteristics of a low grade of intelligence, and both can be advantageously used in guiding such in the cultivation of plants and small animals.

In the judgment of many, too much attention has been given to helping and prodding and coaxing the defectives, and not enough to properly directing the bright ones. It is not the slowcoach who is the menace to the commonwealth. It is the one who is educated to the point where he is ashamed of work, and has not been guided into any suitable occupation.

It is often the very bright pupil who has the idle time that leads into mischief, and whose easy time in school leaves him unfitted for the plodding which is a part of every vocation.

In New Orleans the schools have taken up the study of the exceptional child, and through his parents and without attracting his attention to the fact that he is being studied, trying to ascertain why he is strong, healthy and happy, and so create an ideal for which others will strive.

As this child is the *really normal* child, these studies will show the results and comparative value of heredity and environment, and the time and effort lost on dullards can be spent on these normal pupils.

#### MODIFICATIONS IN ADMINISTRATIVE MEASURES NECESSITATED BY THE CARRIER PROBLEM.\*

By F. W. BROWNING, M. D., Health Officer, Hayward.

The "carrier" problem confronts us very seriously in California for the reason that as yet the State Board of Health has not promulgated any regulations for the guidance of the health officer. Criticism, however, is not called for because no practical solution of the problem has been found. It is brought before this body of health officers at this time in the hope that practical recommendations, even though of a temporary nature, may be offered for the consideration of the State Board of Health.

Rosenau makes the trite remark that "the relief of bacillus carriers is one of the rewardful problems in preventive medicine," whilst Albert of Iowa City, after reading a very excellent paper on the problem of the diphtheria "carrier" at the last meeting of the American Medical Association last June, which was freely discussed by eminent men, closes the discussion thus: "The number of methods that have been discussed emphasizes one of the conclusions that we made, viz: that no one method has as yet proved satisfactory for the proper treatment of the carrier condition."

Let us briefly consider the situation in California at this time in so far as it concerns *diphtheria*.

The ruling of the State Board of Health is that "release from quarantine for diphtheria must be based upon the determination of two consecutive negative cultures from the nose and throat, these

two cultures to be taken on separate days" (see Order dated January 8, 1910).

I also have a ruling from the President of the State Board of Health as follows: "All children in whose throats the Loeffler bacilli are found should be isolated." And again from the same authority: "Just so long as the Loeffler bacilli are found in a child's throat, that child should be quarantined." These rulings only deal with clinical cases of diphtheria and post-diphtheria carriers, whilst the vastly more numerous class of persistent "carriers" are allowed to roam at will, and because they are not in any way restricted they are unquestionably the more frequent source for the dissemination of diphtheria.

In some countries, Austria to wit, bacillus carriers are to be regarded exactly like persons ill of the contagious diseases, or like suspects. In Toronto, Canada, all diphtheria carriers are isolated and thus prevented from coming in contact with other children.

According to an investigation made by the Research Laboratory of Johns Hopkins Hospital there was an average of 3.61% of carriers among the 80,000 school children of Baltimore, whilst 3.48% was the average number of carriers among the general population of the city, which, with an estimated population of 600,000 would give 20,880 carriers in the city. This works out, according to the report, with an average of 20 carriers to every case of diphtheria.

Taking these figures as a standard the actual conditions in California are that the *one* case of diphtheria is quarantined, perhaps for six months or more (an actual experience in my own practice), and the *twenty* carriers are allowed to roam at large, each one a focus of more or less severity for the further dissemination of the disease. Yet according to the above standard it is not practical to isolate every carrier, for public opinion would not consent. It is, therefore, very essential that some reasonable plan should be devised, even if it is only a temporary one, to meet the present necessities.

Ledingham, in discussing the supervision of diphtheria carriers, says: "The difficulty arises in the case of carriers who have for long periods yielded cultures regarded as positive. In such cases it is advisable to prepare a pure culture, in order to make certain that the bacillus is properly classed as *B. diphtheria* and not one of the rarer forms of diphtheria which closely resemble *B. diphtheria* morphologically. If the bacillus after isolation proves culturally and biochemically indistinguishable from *B. diphtheria*, but completely nonvirulent, the question of the isolation of the carrier arises. If there is good reason for believing that only nonvirulent *B. diphtheria* are present, i. e., if the culture appears to contain only one form of *B. diphtheria*, then it may sometimes be necessary to relax the isolation in certain cases, but under no circumstances should such a child or person be allowed to return to school or to undertake the care of small children."

Would it not be reasonable for the State Board

\* Read before the Fifth Annual Conference of State, County, and Municipal Health Officials, Venice, October 6 to 11, 1913.

of Health to promulgate a temporary ruling in cases of long standing diphtheria carriers when cultures from the nose and throat, as demonstrated in the State Hygienic Laboratory, show a non-virulent type of bacillus, that isolation may be modified? The terms of the modification may be set by the state board or delegated to the secretary or the Director of the State Laboratory.

Last winter an effort was made in Hayward to follow the rulings of the state board in continuing quarantine until two consecutive negative cultures were obtained in all post-diphtheritic carriers and contacts. The result was that out of 14 families in which diphtheria developed absolute quarantine was maintained as follows:

Family of 4 persons was quarantined for 43 days.

Family of 8 persons was quarantined for 50 days.

Family of 3 persons was quarantined for 171 days and still positive.

Family of 3 persons was quarantined for 88 days.

Family of 10 persons was quarantined for 143 days.

Family of 9 persons was quarantined for 40 days.

Family of 4 persons was quarantined for 33 days.

Total, 41 persons quarantined for 568 days.

Thus one-half of the 14 families were quarantined on an average for 81 days each or nearly three months per family, and in every instance they were among the laboring classes.

It is not to be wondered at that the public chafe under such stringent measures, especially when it is known that other carriers whom the public have been led to believe are just as dangerous, are allowed perfect freedom.

The practical outcome of this present method is that the public hesitate to call in medical attention, and in consequence diphtheria will run rife before the health authorities are cognizant of its presence.

The importance of the carrier problem is illustrated by the results of an investigation carried on in Hayward in 1908. A brief report of this work is appended.

#### REPORT ON DIPHTHERIA CARRIERS IN HAYWARD GRAMMAR SCHOOL.

Owing to the presence of several cases of diphtheria distributed indiscriminately throughout the entire school district in the early part of 1908, permission was obtained from the school trustees to test out the entire school of 690 pupils. With the assistance of the State Hygienic Laboratory, which did the bacteriological work, swabs were taken from the nose and throat of half the scholars on February 10th and the other half on February 13th. The report from the laboratory showed 93 of the children as "carriers." These were at once sent home, together with their respective brothers and sisters, and were not allowed to return to school until they all showed two negative (consecutive) reports from the State Laboratory. During the next two months swabs were taken from all these excluded children twice weekly and 33 more of these children developed as carriers, making a total of 126 "carriers." Note that the extra 33 were among the brothers and sisters of the original

93 "carriers." The scholars who had shown negative results at the first examination were allowed to continue at school and were not again swabbed. In all there were 163 pupils excluded from school, of whom 126 were "carriers" at one time or another during the two months from February 10 to April 10. It is interesting to note that the 126 "carriers" represented 83 different families, distributed fairly evenly throughout the entire school district, no section being more affected than another. The percentage of nationalities did not vary from the same percentage of nationalities in school attendance, viz: about one-third American, one-third Portuguese and one-third Germans, Danes, etc. The distribution of the "carriers" in the school grades was of about the same ratio, though the Eighth Grade had the highest percentage, about 50% of the class being absent at one time. It is worthy of more than passing note to mention that during this period there were seven cases of diphtheria, six were pupils who had given negative results at the original swabbing and were therefore attending school at the time they were taken sick. The other case was that of a mother of a scholar who was a "carrier." Of the seven cases three died, medical attention not having been sought until the children were practically moribund.

With the exclusion of the children from school no special treatment was ordered, nor was any special care given so far as can be ascertained, except in one or two cases.

The following table shows the percentage of "carriers" persisting during the two months:

Total number of children examined—690.

Feb. 10-13.....	126	"carriers"....	about 18 %
Feb. 18.....	79	"....."	11.5 %
Feb. 29.....	62	"....."	9 %
Mch. 10.....	45	"....."	6.5 %
Mch. 17.....	33	"....."	5 %
Mch. 23.....	23	"....."	3.25%
Mch. 31.....	15	"....."	2.25%
April 10.....	12	"....."	1.75%

On April 10th the school trustees ordered all children re-admitted to school. No further diphtheria developed until July—during vacation time of school, when three children in one family who had all been "carriers" and consequently excluded from school during the investigation and were among those ordered to be re-admitted, became victims.

#### SUGGESTED IMPROVEMENTS IN OUR METHODS OF CONTROLLING THE COMMON CONTAGIOUS DISEASES.\*

By JACKSON TEMPLE, M. D., Health Officer, Santa Rosa.

In presenting this paper to you I will be guilty of much use of the first personal pronoun. When I say I, I mean I for I do not expect any other than myself to be held responsible for the views expressed herein. I do not wish you, however, to consider them original. As a matter of

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fact many of my suggestions were presented to a recent legislature in a bill but met defeat at the hands of a body educated, apparently, to oppose everything medical.

There should be improvement in our present methods of controlling contagious diseases for the following reasons:

The first reason is that there is no uniform method in our administration of the laws and rules relating to the control of these diseases. I doubt if there ever will be, at least as long as our health boards and health officers are appointed as they now are. There are doubtless many brilliant, conscientious, efficient health boards and officers in this state. No matter how brilliant these individuals are, their efficiency is nullified or reduced by the systems under which they operate. This is not to be attributed to the apparent or real lack of efficiency of any one or more individuals. As a matter of fact there is not sufficient cohesion in our public health machine. As a city health officer my acts and my methods are not the same as those of the county health officer by whose territory I am surrounded and my work and methods are and only can be remotely influenced by the State Board of Health.

To be efficient our system should be more coherent and our authority descend directly from the State Board of Health. The State Board should be paramount, next in authority the county health officer, and then the health department of the city and town.

All health reports for the entire county should be made to the county health office maintained at the county seat and transmitted through that office to the State Board of Health. In this way I would be continually informed of what is going on immediately about my jurisdiction.

As a simple illustration, adjacent to and continuous with our city are the residences of a large population compared with that within the city limits. This district is under the supervision of the county health officer, whose methods do not coincide with mine. In diphtheria I quarantine the entire family and allow none to attend school from that family until disinfected, immunized with serum, and free from the presence of the Krebs-Loeffler bacillus in the throat. The patient is isolated until no more germs are demonstrated in the throat, on three consecutive days. The first culture is not taken until twenty-one days after the case is reported to my office. The county health officer makes no cultures and requires none, allows the attending physician to place a quarantine upon the house, and asks only to be informed of the time when the visiting physician thinks the patient is well. In my estimation this amounts to no quarantine at all.

I require that all physicians in my jurisdiction shall report cases as specified in the quarantine law of 1911. I know that many cases are not reported, and as long as man is man and is subject to the same influences and persuasions as now control him, many cases will continue to go unreported. However that may be, it is only

abetted by our lax system of health authority and methods.

In the matter of reporting cases there is no uniform system. My office provides blanks to the doctors upon which to report contagious and communicable diseases. Doctors are also permitted to make their reports by telephone. Physicians reporting contagious or communicable diseases, in addition to giving name, residence and source of infection, should also give the place of employment or school attended by the members of the family. He should also report any exposures known to him. In this way a record would be kept at the central office in the county seat. The health officer whose territory is exposed by the place of employment or school attendance should be notified of such exposure. He would then be in a position to take whatever measures he might deem necessary in the matter.

As an illustration, many children at Cotati attend school at Petaluma eight miles distant. In case of diphtheria in a family at Cotati having a child attending school at Petaluma the county health officer is not informed of that fact. He cannot inform the school or health authorities at Petaluma, under the system practiced in Sonoma county. Of course, he can and should know and if his office were responsible for the whole county in and outside city and town limits I believe he would watch and know.

Again, about two months ago, four patients suffering from a very virulent typhoid infection were brought into my jurisdiction from that of the county health officer. I was notified by the attending physician of two of them and discovered the other two for myself. All four had been living together. I had no word from the county health officer but I notified his office of the cases and whence they had come. Nothing, as far as I know, was done by the county office. Interested parties employed me to find the source of infection and I did so and reported same to the county health office. However, the source of infection was eradicated under my direction and without the assistance of the county office. This matter should have been handled first by the county office and my orders or instruction should have come from that office.

My office communicates with the police office, which places a placard on the house informing the dwellers therein of the quarantine and their duties in regard thereto. After a specified time the quarantine is removed and the place is disinfected by the residents under the supervision of myself or deputy, or the city does the disinfecting itself. In the matter of disinfection there is a great amount of difference of opinion and practice. The charter and ordinances of my city make no provision for disinfection except that it shall be performed. Usually the work is required to be done at the expense of the householder and under the supervision of the health officer or deputy. The board of health or health officer may elect to do the work at the expense of the city. In my opinion disinfection should always be done by some one



regularly employed by the city and at public expense. This practice should be uniform in all communities.

I am particularly interested to know what is the general practice in regard to the time each case is kept isolated. Recently I went through all the literature at my disposal trying to compile a consensus of opinion in the matter of incubation, invasion and time of contagion, in contagious diseases. I was surprised at the amount of literature on contagious diseases, in which so little attention had been paid to these phases of the subject. I expected each author would express his opinion on each of these matters seriatim. Most authorities had left out the period of invasion, few had missed a consideration of the period of incubation, but none had expressed his opinion as to the time of contagiousness of all the diseases considered. It is not my province nor my intention to try to inform you on these subjects, but I assume we all have fairly well fixed in our minds how we should dispose of the matter of quarantine and isolation in each case. Certain it is that we should get together on these matters and the length and character of quarantine in each case. This matter I understand will be treated and probably agreed upon in a report of a committee previously appointed to consider it. It was chiefly the consideration of this matter that induced the council of my city to send me here at this time.

You will note that I have not said that there are many health officers who do not know how to conduct their offices or do not conduct them as they should, but that there is no uniform method of reporting and caring for the quarantine of contagious and communicable diseases. Lack of uniform method causes confusion and in confusion there can be no efficiency. Lack of proper and efficient methods in some offices can be attributed to political influences. One man in a near-by country town (the health officer of that town) recently said to me: "If I attempted to enforce the provisions of the state quarantine laws I would be driven from the house of my patients and the other doctors of my jurisdiction would refuse to report any contagious cases to me." More shame to him and his colleagues. If members of the medical profession fear to enforce those measures which according to their standards are for the benefit of the community, how can we hope for the co-operation of the public? How little faith must such men have in the precepts of the profession they exploit. This in itself strongly urges greater cohesion in health office administration.

It is probable that this particular health officer is not alone in this viewpoint. If such is the case (and it is) then it is that the general public is not ready to accept our views in the matter of the control of contagious diseases. The only remedy that I can see for this is the education of the public to better health standards. To accomplish this education nothing can or does excel the enforcement of the health laws and rules themselves. With my limited experience I can see that this is a fact. When I assumed the office I now occupy

nothing or nearly nothing had been done to enforce health laws or rules except what was specifically demanded by the Secretary of the State Board of Health. Now regulations that were then dead for want of use, are enforced, with the assistance and sometimes the insistence of those who used to be struck with indignation at the simplest and smallest request of the health department. Further than this, we can educate our public through the schools and public demonstrations by means of popular lectures. The public receives with avidity all such instruction that it can get in matters pertaining to farm plants and animals. It would receive with equal avidity the lectures and demonstrations carried on by the board of health. It does so receive them when they are provided. We allow laws to be passed for the control of disease and the practice of the healing art, which are fostered by those who think differently than we do. We say of the antivaccinationist and the "Christian Scientist" that they have accomplished the passage of legislation favorable to them, because of the momentary influence over individual legislators when they are passing laws at Sacramento. I tell you such is not the case. The actual fact is that they educate a considerable portion of the population to their way of thinking. They do actually receive favorable legislation because many of the people are with them. The law entitled "An act to encourage and provide for vaccination, etc.," and which should be entitled "An act to discourage and provide against vaccination, etc.," was passed not because the antivaccinationist and the members of every other sect and cult and ism opposed to all health regulation not their own and especially that with medical supervision, gained control of our legislators, but because the will of all the people was not opposed to them. It is true we have to put up with political pandering to certain constituencies but as a matter of fact the greater representation was made against our point of view. When the bulk of the people are educated to proper health regulations the politician will turn his eyes and ears the other way. I am not willing to acknowledge my professional beliefs so flimsy and so shallow as not to be able to withstand any and all criticisms and misinformations. What is true can be proved to be true and when all the people are convinced of what is best, that and only that is what they will have.

I advocate as much public instruction for the promotion of human conservation as is now accorded commercial conservation. What is right in health regulations is provable and will survive. What we want and need are uniform instructions and regulations to follow, then those who are brilliant and efficient will still be efficient and those who are naturally inattentive and inefficient will be less so or will be replaced with those who are efficient.

To sum up. I suggest a more coherent system of public health administration. The central supreme power should be vested in the State Board of Health as now. Next in order of authority should be the County Board of Health with an

organized clerical and laboratory force at the county seat. Last should be the City or Town Board of Health. Methods of quarantine, isolation and disinfection should be the same in all communities. Disinfection should always be done by trained, competent experts paid by public funds and disinfection after contagious or infectious diseases that have been quarantined should never be left to or permitted to be done by the householder. This procedure should apply to all localities. For the accomplishment of the best results from this system I advocate energetic and efficient public instruction. When all the people understand what is best that is what they *will* have.

Finally, for the benefit of the new more coherent machine of public health administration, I recommend a Bureau of Efficiency to be maintained by the State Board of Health. This department should employ public health experts to visit, confer with, criticize and help the heads of the various units. They should make periodic visits to all health officers as well as special visits for special occasions. With the addition of this department we shall promote not only more coherence but more efficiency in our public health administration.

#### RECENT LEGISLATION ON COMMUNICABLE DISEASES IN THE UNITED STATES.\*

By JOHN N. FORCE, M. D., Berkeley, Asst. Prof. of Epidemiology, University of California.

It is proposed in this paper to consider some recently published regulations and recommendations in the control of a group of communicable diseases which for purposes of administration have been designated as "Class A." These diseases are smallpox, scarlet fever, diphtheria and typhoid fever. In this connection a study has been made of all legislative acts and State Board of Health regulations, bearing on communicable disease control, which have been issued since June 30, 1911.

**General Procedure.** The general procedure in communicable disease control may be classed under the following heads: notification, investigation, quarantine, isolation, removal, release and disinfection.

**Notification.** At the eleventh annual conference of state and territorial health authorities with the United States Public Health Service, the committee on morbidity reports presented a model state law for morbidity reports, which was adopted with the suggestion its provisions be made a part of state board of health regulations until legislative enactment. The text of the model law appears in the Public Health Reports, Vol. XXVIII, No. 26, p. 1323, June 27, 1913.

**Investigation.** The responsibility of the local health authority for conducting a proper investigation of each case of communicable disease cannot be overestimated. By this means carriers and missed cases may be discovered and placed under restraining rules.

**Quarantine.** Recent state sanitary codes are recognizing two types of quarantine.

1. Absolute quarantine, which provides for the isolation of the patient and the complete segregation of the social unit of which he is a member.

2. Modified quarantine, which provides for the isolation of the patient, but allows exit and entrance to members of the social unit depending on immunity to the disease, conditions of occupation or age.

**Removal.** While the removal of the patient to a contagious disease hospital is recommended in the case of a person whose isolation within the social unit is impracticable or would work extreme hardship, either to himself or the social unit involved, it is not held that removal to a hospital has had any effect in lowering the percentage of incidence.

**Isolation.** Isolation of the patient has its chief value at the beginning of an epidemic, where the cases are few and the contacts can be controlled. Under these conditions, isolation may prevent the formation of carriers. When, however, the disease has become endemic and there are numerous carriers and missed cases, isolation has no marked effect in controlling the spread of the infection. The conditions of isolation should be carefully supervised by the local health authority, and absolute quarantine should be substituted if members of the social unit violate the conditions. This latter situation should be avoided if possible, since it may result in the formation of more carriers through the enforced segregation of the members of a social unit within narrow confines.

**Release.** Procedure in release is of course conditional on the amount of our exact knowledge of the modes of transmission of the disease in question. Evidence is slowly accumulating that the prodromal stage of many of the contagious diseases is in reality the most infectious. This will undoubtedly tend to shorten the period of isolation to coincide with the period of infectivity.

**Disinfection.** The need for an efficient destruction of infectious material *during the course of the disease* should be impressed on all persons having any relations to the patient. Terminal fumigation, with its false impression of future protection, should never be substituted for the routine disinfection or destruction of infectious material.

In this connection is quoted the following paragraph from the 1912 Report of the Committee on the Study and Prevention of Communicable Diseases, of the American Public Health Association: "Your committee, however, is of the opinion that terminal room disinfection as at present practiced by the average Board of Health, has little effect in controlling the spread of infection, and that it appears, in so far as figures are available, that the percentage of return cases is practically the same in those communities where disinfection is compulsory as in those where it is not required."

**Special Procedure.** Under this heading will be considered smallpox, scarlet fever, diphtheria and typhoid fever.

**Smallpox.** There is a tendency in the more recent state regulations to recognize vaccination as

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the only efficient measure in the control of smallpox. We find, for example, in the state code of Florida that quarantine for smallpox has been abandoned, and no restrictions are placed on members of the social unit other than the patient. The patient must be isolated, and vaccination of contacts is recommended, but is entirely voluntary. Terminal disinfection is performed only when members of the social unit have refused to be vaccinated. In Minnesota, on the other hand, where no quarantine for smallpox is recognized, contacts must be vaccinated or placed under the same conditions of isolation as the patient. Both of these states put up warning cards as a matter of information for persons coming to the house. The New York Public Health Manual states: "While everything except vaccination is of minor importance, either to protect people from smallpox or to control an outbreak, patients should be rigidly quarantined throughout entire disease, and thorough disinfection of patients and premises done after recovery." Unless the patient is removed, the absolute quarantine is maintained for three weeks, or until the skin is clear. Contacts must be vaccinated and kept under observation. Iowa prescribes a modified quarantine which releases members of the social unit who have been vaccinated during the preceding three years. The case is isolated until after complete desquamation, and fumigation is prescribed. Vaccination may be either by scarification of the skin or by internal administration. In this connection I should like to state that I recently produced primary vaccinia in two persons who were armed, but not protected, with certificates of immunity based on internal vaccination.

**Scarlet Fever.** The present question involved in scarlet fever is whether release should be based on a fixed time, on the completion of desquamation, or the condition of the naso-pharyngeal membranes and the absence of suppurative otitis media. Minnesota covers all the points by requiring a three weeks' minimum quarantine period in addition to completion of desquamation and normal condition of the throat and nose. The New York Manual says: "The duration of the quarantine cannot be given, as it is impossible to say positively when the infectivity of all cases ceases. While the desquamating scales are not necessarily contagious, it is a good rule to isolate the patient until the skin is clear. It is most important to isolate until the mucous surfaces are clear." Absolute quarantine is employed, but removal is advocated. The following paragraphs are from the Report of the Committee on Communicable Diseases for 1912: "Evidence is accumulating that the infectious principle in scarlet fever resides in the naso-pharyngeal secretions and not in the scales of desquamation. In those hospitals in England and the United States where it is customary to discharge patients when the nose and throat appear normal regardless of desquamation, a marked reduction in the length of detention is shown without any appreciable increase in the number of return cases. A certain number of cases seem to show a return of infectivity some time after release, this return being

apparently due to a coryza. Doctor Morton, superintendent of the Lightburn Hospital, Lanarkshire, England, speaking of return cases says: 'We are more and more being forced to the opinion that scarlet fever is only infectious by means of fresh discharges, usually transferred by direct transmission from one person to another, or if not directly, then by something which has been inoculated with the discharge not more than a few hours previously.'"

**Diphtheria.** The release from quarantine is in general based on the securing of two negative cultures from the patient, which must be taken from one to three days apart. There are special rules for this procedure varying with the several states. Minnesota releases at the end of six weeks, even if the two negative cultures have not been obtained. In New York twenty-one days of quarantine are required, and if two negative cultures can not be obtained at the end of that time, a special investigation is conducted by the state health authority. In Washington the last culture of the two must be taken by the local health authority, and a negative culture must be obtained from all contacts. Iowa prescribes that the cultures shall be from both nose and throat, shall not be taken until five days after the disappearance of all inflammation of the nose and throat, shall be examined by the director of the state bacteriological laboratory or a bacteriologist designated by him, and shall not be taken within twenty-four hours of each other.

**Typhoid Fever.** Several of the states prescribe terminal disinfection, fly screening and inspection of surroundings of all cases of typhoid. There is no reference in any of the codes considered to the examination of stools before release in order to recognize a possible carrier, and limit his occupations accordingly. The Committee on Communicable Diseases in both the 1911 and 1912 reports laid emphasis on the value of the anti-typhoid inoculation.

**Score Card for Health Departments.** Preliminary announcement is made of a score card for health departments which is now being prepared. It is hoped by the use of this card to secure definite ratings of the various health departments throughout the state, which will be a basis for constructive criticism.

**The California Sanitary Code.** The State Board of Health is engaged in the preparation of a sanitary code for California. The first portion of this code to be issued will deal with the control of communicable diseases. It will be supplied to health officers in the form of circulars which will eventually be assembled in book form with a suitable index. Under each subject will be considered:

1. Rules bearing on the subject issued by the State Board of Health.
2. Notes explanatory of these rules which will be inserted in the body of the rules, but printed in a smaller type.
3. Directions for any special procedure not covered by the rules or explanations.



4. The Acts of Legislature bearing on the subject.

In connection with this report, a circular dealing with the very timely topic of rabies is presented.

It must be remembered that the preparation of these circulars involves a certain amount of labor, consisting principally of reading the regulations and procedure of other states and of foreign countries. In the case of smallpox certain experimental work was carried out, as was the case with poliomyelitis, and it is hoped to make practical application of the findings in the circulars. In consideration of these facts the board requests a certain amount of patience on the part of the health authorities.

### REGULATIONS OF THE CALIFORNIA STATE BOARD OF HEALTH

for the Enforcement of

#### AN ACT TO PREVENT THE INTRODUCTION AND SPREAD OF RABIES.\*

(Chapter 369, Statutes of 1913.)

Rule 1. Any person owning, or having the charge of, or observing any animal which he shall know or suspect to be affected with rabies shall immediately confine such animal, if this can be brought about with reasonable safety, and shall at once give notice to the local health authority of the whereabouts of such animal and the reasons for believing it to be affected with rabies.

**Note:** The diagnosis of rabies may be difficult and may require the judgment of an experienced physician or veterinarian, but any of the following symptoms should be considered as sufficient evidence for suspecting rabies and reporting the animal, under the provisions of this rule, for further investigation.

1. Sudden change in disposition.
2. Unusual nervousness or irritability.
3. Tendency to leave home.
4. Change in voice.
5. Refusal to eat.
6. Tendency to snap or bite without provocation.
7. Weakness or paralysis of the legs or lower jaw.

Rule 2. Every local health authority upon receiving information of the existence of rabies must immediately make an investigation and within twenty-four hours thereafter must report fully in writing to the State Board of Health, except as provided in Rule 4.

Rule 3. Animals confined under suspicion of having rabies shall be kept under proper care and observation and shall not be killed or released until ten days shall have elapsed dating from the beginning of the confinement. If the animal dies or has been killed under suspicion of having rabies, its head shall be removed and shall be sent to the state or municipal laboratory for examination.

**Note:** See appended directions for sending specimens to the laboratory.

Rule 4. When the State Board of Health shall declare a quarantine against certain designated animals within a specified area, on account of the existence of rabies, all such animals within such

area shall be kept in strict confinement upon the private premises of the owners under restraint by leash or closed cage or paddock. In areas already under quarantine, or special regulations substituted for quarantine (Chapter 369, Sec. 2, Statutes of 1913), the provisions of Rule 3 may be abridged or modified at the discretion of the local health authority and the reports required in Rule 2 may be made monthly, unless the State Board of Health shall specify to the contrary.

**Note:** Specified areas, districts, subdivisions, and similar terms in these rules, do not necessarily follow city or county lines, but refer to areas whose boundaries are determined by the extent of the infection and the territory endangered thereby. By declaration of quarantine is meant the formal notice that a given area is placed under quarantine for rabies by the state board of health. This notice will be sent by letter or telegraph to the local health authority, who will proceed as an agent of the state board of health to enforce the provisions of the law.

Rule 5. If the State Board of Health, after the establishment of quarantine, substitutes for Rule 4 such regulations as may be deemed adequate (Sec. 2, Chapter 369, Statutes of 1913), failure to enforce such substitute regulations strictly will be followed by a return to the enforcement of the full regulations of quarantine (See Rule 4) or such changes in the regulations as may be deemed advisable by the State Board of Health.

**Note:** Regulations, substituted for quarantine, will be based on the special conditions in the area under consideration, and will be determined by the state board of health in conference with the local health authority.

The following illustrates measures which may be incorporated, singly or in combination, in regulations adopted for enforcement under this rule:

1. Restriction of dogs to enclosed premises of owner, and appearance on street under leash, provided they are not taken upon public conveyances.
2. Permission for dogs to run at large if wearing a muzzle of approved type.
3. Exemption of dogs from muzzling requirement while engaged in hunting or herding under supervision.
4. Extension of this exemption to all dogs in a specified subdivision of the area under regulation, provided that these dogs are not taken out of this subdivision.

Rule 6. Quarantine and regulations substituted for quarantine together must cover a continuous period of six months before the State Board of Health will consider release from quarantine or from substituted regulations.

**Note:** The period of six months has been designated because this length of time covers the incubation period for practically all cases of rabies.

The state board of health will not make a quarantine order when it appears on investigation that the infection is strictly limited to the animal exhibiting the disease, and all contacts are under control.

Rule 7. When an area has been declared by the State Board of Health to be under quarantine, or regulations substituted for quarantine, on account of rabies, no dog shall be taken, or allowed to go, into or out of such area, except upon presentation of a written permit from the Secretary of the State Board of Health, or a representative authorized by the State Board of Health to issue

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permits under certain conditions prescribed by the Board.

**Note:** The permit specified in Rule 7 will ordinarily be issued for animals from uninfected areas and for animals brought in for temporary exhibition purposes in theaters, bench shows, etc., provided these latter animals are kept segregated from other animals in the area.

**Rule 8.** It is the duty of all peace officers and local health authorities to enforce the requirements of the quarantine or regulations declared by the State Board of Health (See Sections 3, 4 and 5, Chapter 369, Statutes of 1913, which Act of the legislature will be found printed in full in this circular).

**Rule 9.** During such time as the quarantine, declared by the State Board of Health or the regulations substituted by the Board, shall be in force in an area, each treasurer of a county, city and county, or incorporated city or town, situated in whole or in part in the area specified, will be expected to make a monthly report to the State Board of Health, stating the methods and amounts of the collections and disbursements of the moneys of the rabies treatment and eradication fund, and the total amount of money on hand in the fund. (See Sections 6 and 7, Chapter 369, Statutes of 1913, regarding the establishment of the fund.)

#### GENERAL DIRECTIONS.

##### *Directions for Sending Material to the State Hygienic Laboratory for Examination for Rabies.*

Where possible, the animal suspected of having rabies should be confined and kept under observation until it dies. If it is killed in an early stage of the disease, diagnosis from microscopic examination is apt to be difficult, and results are delayed by the necessity for other tests. A rabid animal generally dies within six days. If the animal is well at the end of ten days, rabies may be excluded and examination of the brain is not necessary.

If it is necessary to kill a rabid animal, it should not be shot or injured in the head. The brain is the part required for examination, and injury to it makes diagnosis difficult or impossible.

After the death of the animal, the head should be removed by cutting through the neck far enough back to leave the skull intact. Care should be taken not to cut or lacerate the hands during the operation.

Pack the entire head in ice in a metal container, e. g., a tin pail or can. An excellent method of packing is to place in a large tin pail or can a layer of sawdust or shavings, a layer of ice, and then the head. Cover with an abundant layer of ice and add a top layer of sawdust. A suitable metal cover should be soldered in place so that there is no possibility of the escape of liquids or odors in the express car. Mark plainly, giving the name of the shipper. Send by express, without delay, to the State Hygienic Laboratory, Berkeley, California. Express charges must be prepaid.

A letter describing in detail the local situation with regard to rabies will be appreciated.

The following blank is furnished by the laboratory. If it is not at hand, write a letter giving the data indicated:

##### CALIFORNIA STATE BOARD OF HEALTH, State Hygienic Laboratory, Berkeley.

Please fill out this side of blank in full, and send with specimen to laboratory.

##### Material for Examination for Rabies.

Sender's name.....Address.....  
Health Officer's name.....Address.....  
Name of owner of animal.....Address.....  
Description of animal whose head is sent.....  
Where was the animal found?.....  
Was animal killed or allowed to die?.....  
How long sick?.....  
Diagnosis from symptoms.....  
What other animals were bitten by this one?.....  
What human beings were bitten?.....  
Is report to be sent by telegraph (collect), telephone (collect) or mail?.....  
To whom?.....

##### *Directions Regarding the Pasteur Treatment for the Prevention of Rabies.*

If a person has been bitten by a rabid animal, it is recommended that the wound be cauterized immediately by the nearest physician, preferably with nitric acid. Arrangements should then be made at once for the Pasteur treatment for the prevention of rabies.

Persons who are able to pay for treatment without undue hardship should arrange with their physicians to have the necessary material purchased and administered. The antirabic virus manufactured by the State Board of Health is not for sale, and is not sent out to physicians.

Each person who is in need of the Pasteur antirabic treatment and is unable to pay the expense connected with private treatment without undue hardship, should report immediately to the local health authority or, if this is not possible, to a private physician. If treatment by the State Board of Health is recommended, the following blanks should be signed by the appropriate persons and should be given to the patient to be presented at the State Hygienic Laboratory, or one of its branches, or a municipal laboratory where the free state treatment is being administered.

##### APPLICATION TO THE CALIFORNIA STATE BOARD OF HEALTH FOR THE PASTEUR TREATMENT FOR THE PREVENTION OF RABIES.

###### **Application of Patient or Parent or Guardian.**

I hereby apply to the California State Board of Health for the Pasteur treatment for the prevention of rabies, and declare that it would be a hardship for me to pay for the treatment at the usual rates.

.....  
Patient, Parent, or Guardian.

###### **Statement of Local Health Authority or Physician.**

The following named person has reported to me regarding the need for antirabic treatment by the State Board of Health:

.....  
I have examined the wounds and have inquired into the circumstances, and I believe that there is a possibility that the above-named person has been infected with the virus of rabies.

Date.....

.....  
Local Health Authority, or Physician.

This part of the blank should be filled out, torn off at the line, and mailed at once by the local health authority or physician to that branch of the laboratory to which the patient is sent.

I have to-day directed the following person to

apply at once to the.....laboratory for  
antirabic treatment by the State Board of Health.

Name of Patient.....

Remarks:

Date.....

Local Health Authority, or Physician.

The patient should go as soon as possible to the nearest branch of the State Hygienic Laboratory and should present the written statements of himself and the local health authority or physician to the director. If the director of the laboratory agrees that treatment is advisable the Pasteur treatment will be administered without charge. Persons taking the treatment at state expense must defray their own living expenses while boarding near the laboratory. If funds for this purpose are not available, the local health authority will advise as to the proper procedure.

The following cities have arranged for the administration of the state antirabic virus to their citizens at the laboratories of their health departments: San Francisco, Los Angeles, and Sacramento.

Citizens from other parts of California are treated at the nearest one of the following branches unless there is special reason for transferring patients from one laboratory to another.

The State Hygienic Laboratory, Hygiene and Pathology Building, University of California, Berkeley.

The Northern California Branch of the State Hygienic Laboratory, 406 Inverness Building, Sacramento.

The San Joaquin Valley Branch of the State Hygienic Laboratory, 32 Patterson Block, Fresno.

The Southern California Branch of the State Hygienic Laboratory, 423 Auditorium Building, Los Angeles.

If a local health authority learns that persons have been bitten by a rabid animal, inquiry should be made to find out whether they have come under treatment. If they have not done so, the risk of developing rabies and the seriousness of the disease should be explained to them. If they still fail to come under treatment, a statement of the circumstances should be written and sent to the Secretary of the State Board of Health.

#### STATE LAWS.

##### Chapter 369. (Statutes of 1913.)

An Act to prevent the introduction of rabies or other animal diseases dangerous to human beings, into portions of the state not infected; to control the spread of such diseases after introduction; and authorizing the state board of health to make rules and regulations therefor.

(Approved June 13, 1913.)

The people of the State of California do enact as follows:

Section 1. Whenever any case or cases of rabies, or other animal diseases dangerous to the health of human beings which may be declared by the state board of health as coming under the provisions of this act, shall be reported as existing in any county, city and county, or incorporated city or town in the State of California, the state board of health shall make, or cause to be made a preliminary investigation as to whether such disease does exist, and as to the probable area of the state

in which the population or animals are thereby endangered. If upon such examination the state board of health shall find that any of the said diseases does exist, a quarantine shall be declared against all such animals as may be designated in the quarantine order, and living within the area specified in said order. Quarantine shall be defined for the purposes of this act as meaning the strict confinement, upon the private premises of the owners under restraint by leash or closed cage or paddock, of all animals specified by the order.

Sec. 2. Following the order of quarantine the state board of health shall make or cause to be made a thorough investigation as to the extent of the disease, the probable number of persons and animals exposed, and the area found to be involved; and may substitute for the quarantine order such regulations as may be deemed adequate for the control of the disease in each area.

Sec. 3. It shall be the duty of all peace officers and boards of health to carry out the provisions of this act. During the period for which any quarantine order is in force all officers are empowered to kill or in their discretion to capture and hold for further action by the state board of health or its representatives, all animals in a quarantine area, found on public highways, lands and streets, or not held in restraint on private premises as specified in this act.

Sec. 4. All proper officials within the meaning of this act are hereby authorized to examine and enter upon all private premises for the enforcement of this act.

Sec. 5. Any owner, or other person in the possession of any animal then being held or maintained in violation of the provisions of this act, shall be subject to arrest on the charge of committing a misdemeanor.

Sec. 6. For the purpose of providing funds to pay the expenses incurred in connection with the eradication of diseases included under this act, a special fund, to be known as the rabies treatment and eradication fund, is hereby created for each county, city and county, or incorporated city or town in the State of California. All moneys collected in accordance with the following procedure shall be deposited to the credit of this fund with the treasurer of the county, city and county, or incorporated city or town; provided, that funds now collected from any dog tax may continue to be collected and used for other purposes specified by local ordinances.

(a) Upon the determination by the state board of health that rabies does exist in any county, city and county, or incorporated city or town, a special dog license tax shall immediately become effective, unless a dog tax is already in force the funds from which are available for the payment of expenditures in accordance with the provisions of this act. This tax shall be levied as follows: An annual tax of one dollar and fifty cents for each male, two dollars and fifty cents for each female, and one dollar and fifty cents for each neuter dog, the same to be collected by the proper authority at the same time and in the same manner as other taxes are collected; provided, however, that there shall be collected at the first collection such proportion of the annual tax as corresponds to the number of months the tax has been in operation plus one year advance payment. After this dog license tax has been established in a county, city and county, or incorporated city or town, it shall be continued in force until an order has been issued by the state board of health declaring that county, or such portion of that county as may be deemed advisable, to be free from rabies or further danger of its spread.

(b) One-half of all fines collected by any court or judge for violations of the provisions of this act



shall be placed to the credit of the rabies treatment and eradication fund of the county, city and county, incorporated city or town in which the violation occurred.

Sec. 7. Whenever it becomes necessary in the judgment of the State Board of Health or its secretary, to enforce the provisions of this act in any county, city and county, or incorporated city or town, the said board or its secretary may institute special measures of control to supplement the efforts of the local authorities in any county, city and county, or incorporated city or town whose duties are specified in this act. All expenditures incurred in enforcing such special measures shall be proper charges against the special fund created by the provisions of this act, and shall be paid as they accrue by the proper authorities of each county, city and county, or incorporated city or town in which they have been incurred; provided, that all such expenditures which may be incurred after the issuance of the order establishing the said fund and before the first collection of the tax, shall be paid as they accrue from the general fund of the county, city and county, or incorporated city and town; And, Provided, Further, that all expenditures in excess of the balance of money in this fund shall likewise be paid as they accrue from said general fund. All moneys thus expended from the general fund shall be repaid from the said special fund when the collections from said tax have been provided the money.

Chapter 391 (Statutes of 1913).

An act to authorize the State Board of Health to purchase, or prepare, and distribute, free of cost to certain persons, anti-rabic virus, and making an appropriation therefor.

(Approved June 13, 1913).

The people of the State of California do enact as follows:

Section 1. The State Board of Health is hereby empowered and directed to purchase, or prepare, and distribute free of cost, under such regulations as may be necessary, anti-rabic virus to be used in the treatment of persons exposed to rabies when said persons shall declare that it would be a hardship for them to pay for anti-rabic treatment.

Sec. 2. The sum of five thousand dollars is hereby appropriated for the purposes of this act.

Sec. 3. The state controller is hereby authorized to draw his warrant for the same, and the state treasurer is hereby authorized to pay the same.

### ADMINISTRATIVE MEASURES FOR THE CONTROL OF SCARLET FEVER.\*

By J. J. BENTON, M. D., Health Officer, Berkeley.

The conservation of the health of the community as a whole and the prevention of the spread of disease to the general public constitute the principal functions of the health officer. In dealing with the latter problem his administrative methods for control thereof will, of necessity, vary according as the specific disease falls within one or the other of the two great divisions of infectious or contagious diseases viz: those the etiology and mode of transmission of which have been scientifically proven, and secondly, those whose causation and propagation have not been conclusively demonstrated. In the first category fall such diseases as diphtheria, plague, tuberculosis, typhoid fever, tetanus, yellow fever, malaria, rabies, etc.; while in the second are to be placed scarlet fever, measles, German measles, whooping cough, mumps, etc.

In dealing with the former class of diseases, science has placed at our hands the means of determining the presence of the disease, e. g., by cultural methods in diphtheria, the Widal reaction in typhoid fever and the presence of the specific organism in tuberculosis, plague, tetanus, malaria, etc.; as well as giving the means of preventing their spread, i. e., eliminating carriers—e. g., two negative cultures in diphtheria; extermination of typhoid bacilli in stools and urine; destruction of fleas for plague, mosquitoes for malaria and yellow fever, etc.

On the other hand, in dealing with the second class of infectious diseases—those in which the etiology and mode of transmission have not been scientifically proven—we should be very conservative in our methods and be sure of our ground before accepting new policies.

The most important of these diseases both because of the very serious complications and sequelae to which it gives rise, as well as of the fact that it is the only one of the group in which isolation is enjoined, is scarlet fever.

Of the causation of scarlet fever we are as much in the dark as were our forefathers, but as regards its mode of transmission we have made considerable advance. Formerly, of course, it was universally agreed that this disease was transmitted through the scales, but it has been practically proven that if scales be macerated and then injected into the higher monkeys (who are susceptible to the disease) that the disease does not develop. Whereas, if they, or man, be exposed to the secretions of the nose and throat or discharges from glands or ear, the disease will then develop. Upon this hypothesis there has been a great tendency on the part of physicians to clamor for a material shortening of the period of isolation in scarlet fever, reasoning that as the nasal and pharyngeal discharges have disappeared in the majority of cases within two weeks, it works an unnecessary hardship upon the quarantined individual and his family to continue the isolation longer. My contention has been that so long as we do not know the specific cause of the disease, nor the life cycle of said cause, it is the duty of the health officer to always have an eye single to the protection of the community as a whole from disease, even though this may entail discomfort or even loss to the quarantined individual or his family. Hence I have always insisted upon a minimum isolation of thirty days and I believe my experience in Berkeley has amply justified my action. As an illustration I will cite an epidemic of scarlet fever which broke out in the State Deaf, Dumb and Blind Institute last spring. After some twenty-nine cases had appeared and from four to ten new cases were being reported weekly, investigation showed that the children were only kept in the hospital until the throat symptoms had subsided, usually ten to fourteen days, and were then allowed to return to the classroom and that this accounted for so many "return cases." I thereupon applied to the new attorney for the State Board of Health regarding my jurisdiction as local health officer over the

\* Read before the Fifth Annual Conference of State, County, and Municipal Health Officials, Venice, October 6 to 11, 1913.

state institutions located in Berkeley. He advised that these institutions came under the health regulations of Berkeley just as any other institution or householder does, thus reversing the two former attorneys for the State Board of Health, who claimed that the local health officer had no jurisdiction. Armed with this opinion I insisted upon thirty days isolation in each case and I am pleased to say that after the enforcement of this rule there were no return cases.

In the light of this experience I shall continue to insist upon a minimum isolation of thirty days, for who amongst us has not seen the diphtheria bacillus live in the throat for many weeks after the clinical symptoms of diphtheria had disappeared and the patient was apparently in perfect health? And who amongst us would not have given the individual a clean bill of health? And yet, he would have been a carrier of the disease and a constant menace to the community, had it not been for the fact that we can determine by cultural methods the presence or absence of this infective agent, viz., diphtheria bacillus. Likewise, in scarlet fever in two weeks the symptoms clear up, the throat is macroscopically clean, but having no means of determining scientifically whether or not such is the case, in order that no carriers of scarlet fever escape we should insist upon a sufficiently long isolation period to thoroughly protect the community from such a contingency.

#### RATING THE EFFICIENCY OF HOSPITALS AND INSTITUTIONS FOR THE TUBERCULOUS.\*

By BURT F. HOWARD, M. D., Director of Bureau of Tuberculosis, California State Board of Health, Sacramento.

One of the provisions of the new law creating a Department of Tuberculosis is that it shall be the duty of the director to inspect and investigate all institutions, both public and private, where tuberculous patients are treated. Also he shall prepare annually for each institution a report of its rating on sanitary construction, enforcement of sanitary measures, adequate provision for medical and nursing attendance, provision for proper food, etc.

There are certain advantages of such a classification which suggest themselves. First, it is a sort of "taking of stock," as it will give the department more accurate knowledge than is now available as to one essential portion of its equipment for tuberculosis control, viz., the location, capacity and efficiency of hospitals and sanatoria treating tuberculosis.

By the word efficiency we need not understand merely technical success, but also a certain fitness for the desired end. Assuming that we have in every part of the state hospitals and sanatoria which are hygienic as to construction and management, give good food and all that can be desired in the way of nursing and medical attendance, there may yet be ways in which they are not efficient with regard to the problem of tuber-

culosis as a whole, for example: patients may not go to these institutions in such numbers as to essentially modify the total number uncared for, or they may remain in them too short a time to accomplish a cure or to obtain any adequate educational benefit. Or they may stay in them during a comparatively harmless period of the disease and go to live with relatives during that stage when they are expectorating the largest number of bacteria and are themselves most helpless. The lack of efficiency in these respects may be due to high cost which prevents many from having the benefit of private sanatoria and shortens the stay of many others. It may be due to the fear of the publicity attached to sanatoria for tuberculosis, or rather, perhaps I should say a real phthisiophobia. Patients are often afraid of tuberculosis in other patients, afraid to be with them, and afraid to be seen with them because of the public opprobrium which attaches to the disease. Many also dread the sight of disease in others. Or, again, persons needing treatment may refuse to go to institutions because they will be too far removed from their friends and relatives, will miss various social opportunities and advantages, will be bored by a life of inactivity, or obliged to do work which they would not have to do at home.

Many patients will refuse to go to public institutions, especially those of the county, for various reasons, chief of which is the fear of pauperization, or the dislike they have for accepting charity. I have known of the same attitude toward the public school, but fortunately this is not a common idea in this country, and perhaps if the public hospitals for tuberculosis were developed in somewhat the same way as the public schools have been, there would cease to be the same objection to them. This would, perhaps, mean higher requirements for the hospitals for tuberculosis, at least in some particulars, just as the public school system has often increased the efficiency of private schools or village schools brought under the supervision of the state.

The objection on the ground of pauperization could be met by requiring that those who are able to do so pay a proportion of the cost. This plan already in practice in certain county hospitals will, to a certain extent, overcome this objection when it becomes generally known.

Once at the institution certain types become homesick, and so shorten their stay in spite of the fact that they are improving rapidly while others suffer so with nostalgia that this alone prevents recovery.

Thus we see that efficiency may depend upon cost to the patient, location and accessibility, attractiveness of construction and environment with various social factors including occupation and amusement for the patients. Even in a county or state institution offering care for a nominal rate or entirely free to the individual, there will still be the same questions to consider, and the spread of tuberculosis will be prevented only to the ex-

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tent that individuals can be induced to remain in these institutions a sufficient length of time.

After having made a careful study of existing institutions we will be in a position to make comparisons between the various kinds, as well as with the ideal which we are able to develop. This may well be of benefit both to the state and to the individual institution if the report given to the institution be accepted in the spirit in which it is offered and, no doubt, as it was intended by those who framed the law. Adverse criticism would fail in its object if it were to discourage a moderate beginning, even though it might be far from the ideal. It would be useless in the case of a flourishing institution if entirely ignored.

If the report of the rating which the law requires be adverse in some respects it may prove stimulating to the more desirable institutions and may be the means of bringing less desirable ones up to a proper standard. If there should be found, or there should ever develop within the state a class of unethical, money-making institutions, it is to be hoped that an adverse rating would lead to their elimination or a complete change in character.

Taking up the subject of technical rating, it has been proposed that the method used by health departments for the sanitary inspection of creameries, milk depots, dairies, etc., might serve as a model, and I have attempted to make such a score card not for actual use at present, as it does not seem to me entirely practicable under conditions as they exist, but as a means for getting in mind ideal conditions. I would be pleased if those present would discuss this plan for carrying out the provisions of the law.

After all has been said, it still must be evident that an institution worthy of the name of hospital, or sanatorium, cannot be adequately represented by figures on a score card. Someone has characterized an institution as being "the lengthened shadow of a man," which I suppose means that it is not the site, the buildings, the character of the food, nor even the skill of the medical and nursing staff which determine the essential value of an institution, but that this depends upon the actuating spirit, or perhaps the dominant idea, and that this spirit is almost always a reflection of the personality of the superintendent. However, the character of an institution, like that of an individual, is often more complex than could be implied in such a saying.

The dominant idea of the patients is a very practical and important subject for consideration. A very persistent and often easily answered question is, Do patients enter this institution with the hope and expectation of recovery, and do they maintain this idea through prolonged disappointment? Or do they enter leaving all hope behind, regarding the hospital, so to speak, as a place of last resort?

While the mental attitude of the patients depends partly upon that of the medical and nursing staff, it also depends upon the past record of the

institution or the kind of advertising it has received. It is the expression of the rating of a given hospital in the opinion of the public, and this is my reason for emphasizing this point. Without a good rating in public opinion no public hospital or private sanatorium can hope to be a factor in the problem of tuberculosis.

Another very regrettable phase of public opinion is the tendency to regard tuberculosis institutions as pest houses or public nuisances, the public being, as a rule, quite indifferent to the tuberculous individual until he enters an institution where, in fact, he learns how to protect the public. Then he, as well as the institution, is regarded with suspicion, to say the least. It is a part of our program to educate public opinion to a proper attitude toward institutional treatment of tuberculosis.

In attempting to standardize and idealize institutions which are to treat mainly those who cannot afford home treatment (at least, this is probably the case for the present and coming generation) we shall wish to bear in mind that while certain structural features are more or less essential to economy of administration and ideal sanitation, such as marble walls and tile floors, yet even these may cultivate an extravagance of taste which would tend to discourage later attempts at home sanitation under less favorable circumstances. Also, we will have to remember the class of patients for whom the institution is intended. It is not easy to properly compare those intended for incipient with those planned for advanced cases, and it is particularly desirable that these should be as distinct as possible. It would be well also to add another type, viz., an institution for convalescent cases.

In closing I would like to express the hope that your new department of tuberculosis will be able to accomplish the purpose for which it was created. At first it will be necessary to get at the facts more completely than has hitherto been done, especially to discover how many active cases of tuberculosis there are in the state and, so far as possible, to form an estimate of what proportion of these would be likely to enter institutions. The finding of these patients will require the co-operation of all physicians and health officers. The medical profession is not awake to the need of registration of tuberculous cases and many do not know that tuberculosis is legally a reportable disease. We must look largely to the local health officer to bring about the registration of every case of open tuberculosis of the lungs.

When the state has a register of tuberculous cases it will be in a position to protect the county hospitals against non-residents. The care of non-residents or provision for their deportation and the prevention of pauper immigration from other states are the peculiar problems of the state as distinguished from the county.

While these measures are being worked out, there are two other natural steps in the solution of the problem which I hope to be able to encourage. One is the tendency, already referred to, for county hospitals to give special accommodation to



tuberculous patients for a special charge, making all patients pay something if they can.

The other step is the tendency for private philanthropic dispensaries to gradually yield a portion of their financial burden to the city and the county. We cannot afford to be without the spirit of the philanthropic dispensary, and the men developed by it, but can we not have the same spirit, and perhaps the same men, in public dispensaries?

In making this suggestion I do not mean to imply that the time has come for doing away with private philanthropic dispensaries, and I do think that at present we need as many of both public and private dispensaries as we can get, but certainly the treatment of the tuberculous poor is a civic duty which cannot be adequately done by private charity.

### THE VENEREAL DISEASE PROBLEM.\*

By CHARLES R. BLAKE, M. D., Health Officer,  
Richmond.

In a discussion of venereal diseases, I believe that a proper control of prostitution is the proper weapon. Prostitution is the burning question of the day. The interest in this question is nationwide and you can scarcely find any intelligent person who has not been thinking about it and who is not seeking information and advice.

Investigation has shown us that the cost of immorality to the country constitutes an enormous waste of hundreds of millions of dollars, added to the combined totals of our appalling national liquor and tobacco bills. But investigation cannot reveal or even faintly suggest the human suffering, sorrow, misery, degradation, disappointed hopes and family tragedies that follow in its wake; it cannot sum up the wrecked lives of several millions of men, women or children, nor the enormous and increasing sterility, which alone is alarming from the standpoint of national conservation.

Proven statistics of the City of New York showed that one in every five persons was affected with some form of venereal disease. As a matter of fact, the exact figures are immaterial, for we could not appreciate the awfulness of the evil if it were only one-tenth of the amount, and this is all due to the public prostitute. We are also aware that houses of prostitution are everywhere associated with the utmost political corruption; that officers of the law, doctors and politicians as well as the liquor merchant, make enormous profits from the traffic.

We know that there exists a vast army of vile creatures, called pimps, panders and macks, the most degraded of all human beings, who enslave and then fatten on the life-blood of their helpless girl victims; girls who after a few short years of sexual debauchery, drunkenness and drug intoxication, are dumped on to the street to drop yet lower, to be gathered into the almshouses or the hospitals to die.

Now what are the causes of prostitution? First of all, prostitution does not spring from the nat-

ural proneness of women toward vice. The prostitute herself, however degraded she may become, is a product and not a cause of anything, except in so far as she transmits contagious diseases grafted on her person by men; nor is the despised pimp the cause of the prostitute, nor yet the madam, nor are the officers of the law who tolerate the houses and graft on the inmates. We draw nearer the true source when we discover that many girls are driven to a life of shame by the low wages paid in factories and department stores. The blame, the cause of all causes, lies wholly on the shoulders of an indifferent public, upon our churches and upon our ministers, whose age-long ignorance of the facts is but added proof of neglected opportunities and of guilt. The guilt springs from the complete separation and loss of community interests of rich and poor, from division of society into classes without mutual interests.

The causes lie in the injustice of our industrial conditions, in many of our sweatshops, in our stores and factories. They lie in housing conditions, by which we rob the poor of all privacy and make cleanliness impossible. In the tenements they cry in vain for air, for light, for water and for provisions for decency and privacy for attending the wants of the body. Consider the filthy streets, the small courts, and poor little tots driven to get exercise and play their games in our dirty, dusty asphalt streets in the absence of proper playgrounds; shall we follow them as they grow up but gravitate downward to the low amusements provided to harvest their nickels, to the saloons, the dancehalls and the Sunday parks outside the city and then on down to a life of crime or immorality?

Venereal diseases are forms of contagion. Their control is the natural next step for departments of health. They are the only forms of markedly contagious disease not now definitely proceeded against by health officers, for most health officers, not knowing what to do, shut their eyes and affect to ignore them. Let us also lay aside that old ghost, ever popping up and pretending to be lively and scaring a lot of uninformed and untutored people. The name of that ghost is "segregation." Every man who has read nothing but the papers and has spoken to a few of his friends, naturally thinks that segregation is just one clever and natural way to handle prostitution. But this plan has been tried for centuries and especially noted during the past century, and it has been clearly proven that it does not work and that by it all the worse evils of prostitution are fostered, propagated and fastened upon the community. Segregation does not segregate more than one in ten women. Even if it worked ideally in controlling the women, it has never even pretended to control the men who are the active agents in carrying the infection from house to house, and for this reason alone it is a logical folly. It is also inseparably bound up with graft and official corruption.

In 1912, the New York Health Department adopted rules about along the same lines as the Chicago ordinance of 1909. They began enforce-

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ing them in January last. By these rules, venereal diseases are made reportable. The register in which they are reported is not a public document in the sense of being accessible to every one. If experience demonstrates the need, special dispensaries and perhaps hospitals will be established. The best and most up-to-date treatment is given free if the affected person cannot pay. Special insistence is put upon the continuance of the treatment until cure is complete. The plan has met with some opposition; nevertheless, in less than six months, more than six thousand cases were reported. It has been found in New York rather easy to get venereal diseases reported.

With the abolishment of the "redlight district" in San Francisco and eventually all over the state by law which will shortly be voted on by the people of this state, known as the "Abatement Law," and it will surely win, it will be absolutely up to the boards of health of all cities to formulate a plan, which should be the same all over the state, to exterminate, if possible, all venereal diseases. The police authorities are out of it, as they acknowledge by this law that they are not able to control prostitution or venereal diseases. I do not think there is any way of preventing private prostitution, but with the co-operation of all physicians and the expenditure of some money on the part of all the cities, venereal diseases would soon be under complete control. All cases, women and men, should be treated free of charge, if not able to pay, and should be kept under strict observation until a permanent cure is effected, and if necessary, hospitals should be provided or wards set aside especially for the treatment of all such diseases.

#### THE FIFTH ANNUAL CONFERENCE OF STATE, COUNTY, AND MUNICIPAL HEALTH OFFICIALS.

By W. A. SAWYER, M. D., Berkeley; Secretary of the Conference.

The Fifth Annual Conference of State, County, and Municipal Health Officials took place at Venice, California, from October 6 to 11, 1913. The conference was held in conjunction with the Sixteenth Annual Convention of the League of California Municipalities. The first day was devoted to registration, inspection of the manufacturers' and pure food exhibits, and attendance at the opening addresses before the general meeting.

TUESDAY, OCTOBER 7, 1913.

MORNING SESSION.

The meeting was called to order at 10 A. M. Dr. Wm. F. Snow, Secretary of the State Board of Health, officiated as chairman. An address of welcome was delivered by Dr. W. M. Kendall, Health Officer of Venice. This was followed by a roll call, to which each delegate responded by stating briefly what he considered to be his greatest public health problem. Fourteen of the delegates complained of difficulty in getting adequate sewerage; five reported unsatisfactory water supplies; four had met with difficulties in enforcing

quarantine for communicable diseases; two had had trouble in controlling smallpox and enforcing vaccination. Others found their most serious problems in the management of the tuberculosis cases, the abatement of nuisances, the collection of garbage, the disposition of cases of leprosy, the methods of control of communicable diseases in general, and the inability to secure adequate funds for public health work.

A list of delegates attending the conference will be found at the end of this report.

AFTERNOON SESSION.

The subject for the afternoon was "Standard Methods of Public Health Administration." Dr. F. W. Browning, chairman of the Committee on Standard Methods of Public Health Administration, acted as chairman, and presented the opening paper, entitled, "The Aims and Objects of the Committee on Standard Methods of Public Health Administration." Dr. J. N. Force, secretary of the committee, read a report of the work of the committee in drawing up rules to be submitted to the State Board of Health for acceptance. As introduction to the report he read a paper on "Recent Legislation on Communicable Diseases in the United States." Dr. Force read to the conference the regulations for the control of rabies, which had been recently issued by the State Board of Health. These regulations showed a form which he recommended as being suitable for a complete code of regulations of the State Board of Health. The committee's recommendations for the control of the various diseases were taken up in order, and were accepted after general discussion and amendment.

Dr. Jackson Temple of Santa Rosa read a paper on "Suggested Improvements in Our Methods of Controlling the Common Contagious Diseases."

A paper entitled "Administrative Measures for the Control of Scarlet Fever," was read by Dr. J. J. Benton, health officer of Berkeley.

A paper on "Modifications in Administrative Measures Necessitated by the Carrier Problem," by Dr. F. W. Browning, was read by title.

WEDNESDAY, OCTOBER 8, 1913.

MORNING SESSION.

The meeting was opened at 9 A. M., with a continuation of the discussion of methods for controlling communicable diseases.

Dr. W. A. Sawyer, director of the Hygienic Laboratory of the State Board of Health, gave a brief report of the activities of the laboratory since the last conference. During the year the laboratory administered the Pasteur anti-rabic treatment to 242 persons, and 345 animals' heads were examined for rabies with positive results in 297 instances, figures greater than those for the previous years combined. Many special epidemiological investigations were made, and the usual routine diagnostic work showed a considerable increase.

Professor M. E. Jaffa, director of the Food and Drug laboratory of the State Board of Health,

read a report for the past year, and discussed new legislation having a bearing on the enforcement of the food and drug laws.

A paper on "Rabies in San Francisco, with Notes on Some Recent Additions to Our Knowledge of the Disease," had been submitted by Dr. R. G. Brodrick, health officer of San Francisco, who was unable to be present. His paper was read by the secretary of the meeting.

Dr. Stanley P. Black, health officer of Pasadena, gave a talk on "The Health Officer's Duty in Connection with the Treatment of Rabies." Mr. H. O. Jenkins, health officer of Palo Alto, discussed both papers on rabies and emphasized the necessity for educational work by the health officer if rabies is to be suppressed.

Dr. L. M. Powers, health commissioner of Los Angeles, gave an account of the measures instituted against poliomyelitis in Los Angeles during the outbreak of last year, and discussed the epidemiology of the disease.

Dr. William Simpson, health officer of Santa Clara County, read a paper entitled "The Relation of the Health Officer or Sanitarian to Vocational Guidance." The paper was discussed by Dr. J. N. Force of Berkeley.

The meeting adjourned at noon and the delegates took special cars to Santa Monica, where they were entertained at lunch by the city. After lunch many of the delegates inspected the municipal pier and the sewage disposal plant.

#### AFTERNOON SESSION.

The subject for this meeting was "The Control of Tuberculosis." Dr. C. C. Browning of Los Angeles presided and read a report on "The Work of the State Tuberculosis Commission."

The second paper was read by Dr. Robert A. Peers, health officer of Colfax, and president of the State Association for the Study and Prevention of Tuberculosis. His subject was "Some Points Regarding Tuberculosis of Interest to the Health Officer."

Dr. George E. Tucker, health officer of Riverside, and secretary of the State Association for the Study and Prevention of Tuberculosis, read a paper on "The Activities of the Organized Anti-tuberculosis Societies in California."

The last paper of the afternoon was presented by Dr. Burt F. Howard, director of the Department of Tuberculosis of the California State Board of Health. His subject was, "Rating the Efficiency of Hospitals and Institutions for the Tuberculous." The papers were followed by a discussion of all the papers on tuberculosis by Dr. W. F. Snow, Dr. Wm. Simpson, Dr. O. G. Wicherski, Dr. R. H. Mackerras, Mrs. Jensen, Dr. Wm. K. Lindsay, Dr. J. N. Force, Dr. G. E. Tucker, Dr. James H. Parkinson, Dr. Robert A. Peers, and Dr. Burt F. Howard.

THURSDAY, OCTOBER 9, 1913.

#### MORNING SESSION.

The meeting was called to order at 9:30 A. M.

Dr. James H. Parkinson, vice-president of the State Board of Health, occupied the chair. Dr. O. G. Wicherski, health officer of San Diego County, spoke on "Measures Against Smallpox." A paper by Dr. J. N. Force on "A Test for Immunity Against Cowpox" followed. As illustrations for this paper, a number of pictures, some of them color photographs, were thrown on a screen by means of a stereopticon. Both papers were discussed by Dr. W. F. Snow, Dr. Wm. K. Lindsay, Dr. S. G. Bransford, Dr. F. W. Browning, Dr. J. H. Haile, Dr. O. P. Paulding, Dr. J. H. Parkinson, Dr. Jackson Temple and Dr. J. N. Force.

The next paper was entitled "The Leper Problem," and was read by Dr. E. O. Sawyer, health officer of Los Angeles County. He was strongly in favor of government care for lepers. Dr. L. M. Powers advocated the establishment of a state or government colony, preferably the latter. Others who discussed the paper were Dr. C. R. Blake, Dr. O. P. Paulding, Dr. Stanley P. Black, and Dr. E. O. Sawyer.

A paper on "The Milk Problem in a Small City" was read by Mr. H. O. Jenkins, health officer of Palo Alto. Mr. Hassan, state dairy inspector, and Dr. Jackson Temple participated in the discussion.

#### AFTERNOON SESSION.

A joint meeting of the League of California Municipalities and the Health Officials' Conference was held. Various subjects of general interest were presented. Del Monte was chosen as the place for next year's meeting.

At 4 o'clock the meeting adjourned and the delegates were taken in automobiles to see Santa Monica and the Soldiers' Home.

#### EVENING SESSION.

In the evening a joint meeting of the Health Officials' Conference and the League of California Municipalities was devoted to the consideration of "Public Sanitation as Related to Water Supplies and the Disposal of Sewage and Refuse." Mayor Mott of Oakland presided. Mr. J. J. Jessup, city engineer of Berkeley, read a paper on "Municipal Refuse Disposal." Mr. C. G. Hyde, professor of sanitary engineering in the University of California and consulting engineer to the State Board of Health, presented a paper on "Problems in the Design and Operation of Imhoff Tanks in California." Mr. F. A. Nikirk, civil engineer, spoke regarding "The College Park Sewage Disinfecting Plant and the Proposed Treatment Works at Los Gatos." This paper was illustrated with models of the sewage treatment works. Dr. Wm. K. Lindsay, health officer of Sacramento, read a paper on "Typhoid Fever in California and Its Relation to Water Supply and Sewerage."

FRIDAY, OCTOBER 10, 1913.

#### MORNING SESSION.

The special subject for the meeting was "Sociological Problems Affecting Public Health." Dr. James H. Parkinson was in the chair. Before pro-



ceeding to the regular business of the meeting a short time was devoted to a continuance of the consideration of the control of communicable diseases. It was moved, seconded, and carried, that the Committee on Standard Methods of Public Health Administration be requested to follow the recommendation of Dr. Force in favor of considering the immunity reaction in drawing up regulations for the control of smallpox. A lively discussion arose over the regulations proposed for the control of typhoid fever. It was moved, seconded, and carried, that these regulations be rewritten and submitted to the health officials through the mails for written ballot.

The following resolution was proposed by Dr. W. K. Lindsay, health officer of Sacramento, and was passed: "Be it resolved, that it is the wish of this convention that the Committee on Standard Methods of Public Health Administration recommend to the State Board of Health that those portions of its report dealing with the technic of vaccination and the reaction of immunity be printed in pamphlet form and distributed to every physician in California."

A paper on "The Housing Problem and the Public Welfare" was read by Dr. F. E. Corey, health officer of Alhambra. The next paper was on "Housing" and was presented by Mr. Dana W. Bartlett, a member of the Los Angeles Housing Commission. Both papers were discussed by Dr. Burt F. Howard and Dr. L. M. Powers.

A few minutes before eleven Dr. Parkinson reminded the conference that the opening of the Panama Canal was about to take place and called attention to the importance of the event in the history of preventive medicine. Out of respect for the work of the medical profession in making the canal possible, and more especially for that branch of the profession which is devoting itself to the improvement of the public health, the members of the conference rose and remained standing until the Gamboa dyke had been destroyed.

The regular program was then resumed and Dr. Lindsay, Dr. Cory, and Mr. Bartlett discussed housing problems.

Dr. Blake read a paper on "The Venereal Disease Problem." The discussion was opened by Dr. Powers, who was against the segregation of prostitutes. He regretted that there were no reliable figures on which an opinion could be based regarding the prevalence of venereal disease before and after the abolition of segregation in Los Angeles. Dr. Lindsay reported that there had not been sufficient time since the abolishment of segregation in Sacramento for an opinion to be formed regarding the ultimate effect of the measure. Dr. Snow stated that segregation has been regarded as a failure where tried and that the measure can be put out of consideration because the American public will not permit such a system. Other methods must be devised. Dr. Tucker suggested that the cause would be helped if the State Hygienic Laboratory made free Wassermann tests for syphilis.

A "Report of the Meeting of the American

Public Health Association" was read by Dr. Tucker.

The meeting then took up various matters brought up by the delegates. Dr. Bransford of Suisun brought up for discussion the problem presented by advanced cancer cases who are unsightly and whose presence in public places is objected to by the people.

The following resolution, similar to one already passed by the League of California Municipalities, was presented and carried:

"Resolved, That a joint committee of three suitably trained men be appointed by the League of California Municipalities and the Health Officials' Conference for the purpose of having an investigation made of the several refuse incinerators on the market, and that the committee be requested to report at the next general meeting on types (not makes) which can be expected to yield satisfactory results under stated conditions."

Dr. Snow announced that the American Red Cross was preparing to send out nurses to organize public nursing. Dr. Temple suggested that special attention should be paid at the next annual conference to the organization of the health officials with the object of bringing about better co-operation and a uniform system of "following up" dangerous situations with regard to communicable disease.

The meeting adjourned shortly after noon. Some of the members departed for their homes while others inspected the neighboring cities to find out the progress made in sanitation.

During the conference there was an exhibit at the auditorium and in booths on the pier. The State Food and Drug Laboratory was represented by an educational exhibit of pure and adulterated foods and of charts showing food values of various substances.

#### LIST OF HEALTH OFFICIALS ATTENDING THE CONFERENCE.

Dr. H. E. Piper, Santa Cruz; Dr. J. H. Haile, Winters; Mr. H. O. Jenkins, Palo Alto; Dr. J. N. Force, assistant professor of epidemiology, University of California (Berkeley); Dr. B. F. Howard, director bureau of tuberculosis of State Board of Health (Sacramento); Dr. F. W. Browning, Hayward; Dr. B. F. Eber, San Leandro; Dr. John Wehrly, Santa Ana; Dr. J. J. Benton, Berkeley; Dr. Frank R. Woolsey, Albany; Dr. E. H. Coleman, Sunnyvale; Dr. J. A. Randolph, Glenn County (Willows); Dr. O. P. Paulding, Santa Maria; Dr. O. G. Wicherski, San Diego County (San Diego); Dr. L. R. Willson, Fresno; Dr. Wm. L. Hood, Tuolumne County (Sonora); Dr. E. D. Ward, Los Angeles; Dr. Wesley Thompson, Huntington Park; Dr. L. M. Powers, Los Angeles; Dr. Stanley P. Black, Pasadena; Dr. James H. Parkinson, Vice-President State Board of Health (Sacramento); Dr. W. H. Parker, Santa Monica; Dr. H. A. Putnam, Inglewood; Dr. J. H. Mudd, Merced County (Merced); Dr. J. E. Hubble, Lordsburg; Dr. R. H. Mackerras, Sierra Madre;

Mrs. Jensen, Municipal Nurse, Sierra Madre; Dr. R. B. Davy, Sierra County (Downieville); Dr. A. W. Bixby, Watsonville; Miss Anna C. Jammé, Director of Bureau of Nurses and Hospital Registration of the State Board of Health (Sacramento); Dr. C. A. Whiting, South Pasadena; Dr. W. G. Beattie, San Mateo County (Colma); Dr. Jackson Temple, Santa Rosa; Dr. C. C. Browning (Los Angeles); Mr. Dana W. Bartlett, Member of the Los Angeles Housing Commission (Los Angeles); Dr. Wm. Simpson, Santa Clara County (San Jose); Dr. F. W. Thomas, Claremont; Dr. Wm. K. Lindsay, Sacramento; Dr. L. Q. Thompson, Butte County (Gridley); Dr. S. G. Bransford, Solano County and Suisun; Dr. W. M. Kendall, Venice; Dr. Theo. F. Johnson, National City; Dr. F. E. Corey, Alhambra; Dr. Geo. D. Keeler, Elsinore; Mrs. W. E. Shepherd, Ventura; Dr. George E. Tucker, Riverside County (Riverside); Dr. Robert A. Peers, Colfax; Dr. Charles R. Blake, Richmond; Mrs. Cora D. Lewis, Los Angeles; Dr. R. D. Adams, Monrovia; Dr. W. F. Snow, Secretary State Board of Health (Sacramento); Dr. C. H. Phinney, Eagle Rock; Dr. Will H. Holmes, Pomona; Mr. M. E. Jaffa, Food and Drug Laboratory of the State Board of Health (Berkeley); Dr. W. A. Sawyer, State Hygienic Laboratory of the State Board of Health (Berkeley); Dr. E. O. Sawyer, Los Angeles County (Los Angeles); Dr. E. M. Wilder, Sacramento.

### PELLAGRA.\*

By R. W. HARBAUGH, A. B., M. D., San Francisco.

Pellagra is a symptom complex rather than a disease, characterized by periodical manifestations of gastro-intestinal, skin, nervous and mental changes.

It was endemic in Spain in the year 1735. Casal in 1762 described it as *La Mal De La Rosa*. Frapoli, in Italy, in 1771, called it "Pellagra" or "Dry-skin."

It next spread to France and Roumania, being reported in the latter part of the eighteenth century, and has only been recognized in the United States in the last fifty years.

At the present time there exist about 100,000 cases in Italy, 50,000 in Roumania, and fewer numbers in Spain, France, Portugal and Egypt.

The first case in the United States was reported in South Carolina in 1908. Later cases were reported in Alabama. It has since been reported all over the United States, especially in the southeastern states. We have at present 50,000 to 60,000 cases in the south.

There were 368 deaths from the disease in the United States in 1910.

*Etiology.*—There are two general theories.

(a) Food Intoxication Theories:

1. Corn or maize is supposed to play the same role as rice does in *beri beri*. In support of this hypothesis we have

the fact that although isolated cases have occurred in persons without access to maize, the endemic cases have always corresponded geographically to the areas of cultivation and consumption of corn. The presence of toxic substances, alterations in the grain before or after consumption, fungi, spoiling of the grain, have been suggested as factors.

2. Lombroso isolated (Pellagrozine) from maize and produced pellagra-like symptoms in animals.

(b) Infection Theory:

In regard to this theory we may state as follows:

1. No specific germ has been found.
2. It is apparently neither contagious nor infectious.
3. The following agents have been suggested:

First—Sambon suggested it as a protozoan disease carried by the sand-fly. (Genus *Simulium*.)

Second—Cheney of Italy says it is due to the common blue mold.

(c) An hypothesis has been offered by Dr. Long of the United States Public Health Service, based on a study of 53 cases in South Carolina in 1910. Briefly, it is as follows:

1. Amobae were found in all these cases; these cause ulcerations, and the latter plus secondary infections of the gastro-intestinal tract interfere with digestion and absorption. As the process progresses the condition spreads to the liver and pancreas. Food products decompose, toxins are absorbed.
2. The central nervous system being the highest developed tissue is first affected by these toxins.
3. Skin lesions result from two causes:
  - (a) Direct result of central nervous system changes.
  - (b) Pressure.

Regarding this pressure theory, Dr. Long finds that the lesions follow nerve distribution, and that X-Ray and autopsy show foramina closed by certain deposits. The cervical nerves increase in size from first to eighth, while the foramina normally decrease. Thus we would expect the region supplied by the seventh and eighth nerves to be affected first by the deposits mentioned, and such is the case, the lesions first appearing on the dorsal radial region. Likewise, the first sacral nerve is the largest in the body, and this, plus the tortuosity of the sacral foraminae, shows us why regions supplied by the latter nerve are first affected in the leg.

*Pathology.*—The acute cases have shown atrophy of the intestinal walls, fatty degeneration of internal organs and central nervous system changes. The cord changes are fairly constant, there being degeneration of the lateral columns in the dorsal region, and of the posterior columns in the cervical and dorsal regions.

The stool contains mucus, blood, pus, crystals

\* Read before Cooper Clinical Society of San Francisco, September 15, 1913.

and parasites, including amobae. The stools are usually fermenting and acid.

**Diagnosis and Symptoms.**—Onset: 1. Occurs in spring or autumn with headache, weakness and depression.

The digestive system is affected early. In the mouth sensation of heat, loss of taste, stomatitis, raw beef tongue. Anorexia, nausea and vomiting are common. Diarrhea, often severe and painful, followed by serious and bloody stools, alternating with periods of constipation.

The skin lesions start with an erythema on the dorsal radial region of the hand, resembling sunburn; are symmetrical and sharply defined; extend usually to the cuff line where it ends abruptly, or it may extend to the elbow. The lesion darkens, later desquamates and may leave some pigmentation. Severe cases have similar lesions on the neck (Cassell's collar), down the chest, on the forehead, butterfly erythema on the cheeks; also the anterior surface of the leg and dorsal surface of the foot are affected. In rare instances there is excoriation of the genitals in the female, with pruritis and discharge. Similarly, in the male, there is an erythema of the scrotum and penis.

**Nervous Symptoms.**—1. Headache, and vertigo. 2. Confusion, lassitude, irritability and dullness. 3. Anxiety and depression. 4. Changes in disposition. 5. Hallucinations of sight and hearing. 6. Loss of memory. 7. Rarerly dementia or mania. 8. From the cord lesions we may get the following: (a) Ataxia. (b) Spasticity, with increased knee-jerks. (c) Disturbances of sensation. (d) More rarely paralysis of Spinchters and lost leg reflexis.

**Clinical Tests.**—1. Stool as mentioned. 2. Secondary anaemia.

Pellagra must be differentiated from scurvy, erythema, thrush, G. P. I., and acute infections.

**Prognosis.**—1. Serious in United States. 2. More favorable where it has existed for a long time. For example: the mortality in Italy is only 4 per cent. 3. Acute forms with fever—grave. 4. Moist erythema—grave. 5. Asylum cases—serious. 6. In chronic cases without mental involvement the prognosis is best.

#### Treatment.—

##### 1. Prophylaxis.

- Avoid: (a) Peasant life  
(b) Poverty.  
(c) Corn.  
(d) Isolation not necessary.

##### 2. General treatment.

- (a) Hygienic.  
(b) Change of climate.  
(c) Rest in acute attack.  
(d) Arsenic in various forms.  
(e) Transfusion.

##### 3. Treatment by Dr. Long in his cases.

- (a) Cereal diet, with exception of oatmeal.  
(b) Sodium bicarbonate after meals till stools are alkaline.

(c) Pancreatin Grs. V, t.i.d. salol coated.

(d) Quinine bisulphate enemas in normal salt solution 1/8000.

(e) Flush bowels twice weekly with saline enema.

C. K.—Age 23, housewife; born in the United States; married. Entered the Stanford service at the City and County Hospital under Dr. H. E. Alderson August 14, 1913.

**Complaint.**—Pain in the back and lower abdomen.

**Family History.**—Father died of dropsy. Mother died of cancer of the stomach. No history of tuberculosis. Husband is healthy.

**Past History.**—As a child patient had chicken-pox. Never sick since. Never had malaria, typhoid, rheumatism or pneumonia. Has headaches quite often and feels dizzy. Vision not so good in past four months. Objects blur and appear dim. No head colds or other trouble. During the past four months lips have been dry and parched. Gums have been sore. Tongue has been fiery red and tender on both surfaces. Teeth have given no trouble, and throat has not been sore. Patient says saliva has run from corners of mouth for four months. Has a discharge from right ear at times. Has had few chest colds or persistent cough. Never spit blood. Has night sweats at times, but has not lost weight. No praecordial pain or palpitation. Is short of breath on exertion. Ankle never swollen. Appetite very poor. Bowels have been irregular for past four months. Patient has had severe diarrhea for periods of two weeks at a time, but never passed bloody or tarry stools. At these times she was nauseated and vomited twice. Had dull, heavy pains in the lower abdomen. Pains seemed to run down the legs at times and back felt tired. Never jaundiced.

**Diet.**—Breakfast: (1) mush, (2) eggs, (3) bread, (4) coffee. Lunch: (1) pancakes, (2) meat, (3) potatoes, (4) tea, bread and butter. Dinner: (1) tea, (2) bread and butter, (3) meat, (4) potatoes. Patient says the only thing she specially cares for is mush, and that she has been accustomed to eating large quantities of different varieties. Never eats corn.

In the past four months patient has had frequent burning urination. Never any bloody urine. Patient has been married six years. Has two healthy children. Never had a miscarriage. Menses have been irregular for past four months. She has been very nervous for six or seven months past, having headaches and dizzy spells, perspiring easily, and sleeping very poorly at night. Has noticed that her memory has been getting poor in the last few months. Says she cannot remember the most simple things any more. About four months ago hands became red as fire and patient thought she had been sunburned. The redness was confined to the backs of the hands and came first on the thumb and index finger, spread over the whole dorsal surface, and gradually extended up the forearm to a little above the elbow. At the same time, red blotches appeared on the cheeks and at the angles of the mouth. A red band also came around the neck. The skin became rough and then normal in about one month. Patient was born and reared in San Francisco, never having been farther away than Oakland. Does not use alcohol or tobacco. Never used any drugs. Average weight 135 pounds. Now 135 pounds. Present illness began August 7, 1913, with a recurrence of the reddened hands, red areas on the cheek and neck, reddened sore tongue, excoriation of the genitals, with redness and discharge. Along with this, patient had diarrhea, and was exceedingly nervous. Did not have any reddening of feet.

**Physical Examination.**—A tired, nervous-looking



young woman, resting quietly in bed. Pupils equal; react to light and accommodation. Nystagmus, both rotary and lateral present. No contractions of temporal fields. There is a red band about one-half inch wide running across bridge of nose and making a butterfly-like pattern on the cheeks. Red, roughened, scaly areas at the angles of the mouth. Patient drools, lips are dry and parched. Mucous membranes are bright red. Teeth are well preserved, but poorly kept. Tongue is protruded in the median line; has a tremor; is moist and of a very red color. Looks like raw beef. Pharynx reddened. There is a dry, scaly band running around neck. Patient says this was red before. Chest is poorly arched. Movements equal. Vocal resonance; vocal fremitus decreased over left upper lobe. Both apices hyporesonant. A few fine crepitant rales over left apex posteriorly.

Heart.—Precordial maximum impulse not visible. Palpable in fifth space. Area cardiac dullness not increased. Faint systolic murmur at apex, not transmitted.

Arteries.—Radial not thickened, rate 72; regular, full, soft, moderate tension. Blood pressure—Systolic, 140; diastolic, 115. Abdomen is of flat contour. Many striae of pregnancy present. There is pain on deep palpation in both lower quadrants. Liver and spleen not palpable. The dorsal surface of each hand is rough and fiery red; looks sunburned. The erythema extends up the dorsal surface of forearm, to one inch above the elbow, where it ends sharply. The skin over the elbows is dry and cracked and covered with brown scales. The hands are of the arthritic type. The skin over the knuckles is thickened, dry, cracked and covered with brown scales. Epitrochlears are palpable. Labia are fiery red and excoriated. Tendinous reflexes are all very much exaggerated, but equally so. No disturbance to heat, cold, pain or touch sensations. Muscle sense undisturbed. Patient complains of pain in the elbow and knee joints.

Blood—Red blood corpuscles: Number 3,900,000. Hemoglobin per cent. 78 (Dare). White blood corpuscles: Number 9,500. Differential count.

Polys. ....	70%
Lymphocytes .....	20
Large mononuclears .....	3
Eosinophiles .....	4
Transitionals .....	3
	100

Urine.—Appearance, cloudy; color, amber; reaction, alkaline; specific gravity, 1033; albumen, none; sugar, none; microscopical examination: Casts, none seen; crystals, phosphates; epithelium, stratified squamous; leucocytes, very many; red blood cells, none.

Stomach Contents.—Total acidity, 60; free hydrochloric acid, 25; combined hydrochloric acid, 20; organic acids and salts, 15; lactic acid, none; occult blood, none.

Wassermann Test.—Blood negative.

Feces.—During the first two weeks the feces contained ropy and slimy mucus, but no blood or pus. They contained a few vegetable cells, many starch granules, a few muscle fibres and a small amount of fat. They were highly acid in character, contained occult blood, and amebae of the histolytica type were present. The patient was put on Dr. Long's treatment as previously stated, and at the present time mucus has disappeared from the stools, they are alkaline, and amebae are not to be found.

X-Ray pictures of the cervical foramen show no abnormal deposits. Patient has run a low grade temperature, ranging around 100 degrees since her stay in the hospital of four weeks. Her skin lesions have disappeared, with the exception of the roughened hands and forearms. Her physical condition is still weak. Mentally, she has shown marked

improvement. The tendinous reflexes are still very much exaggerated.

While the case does not prove anything definitely, we think the gastrointestinal condition is the base of the trouble, with the amebae as an aggravating factor. It is at least suggestive that with the clearing up of the bowel condition the other symptoms have improved proportionately.

I wish to express thanks to Dr. H. E. Alderson for permission to report the case and to Dr. J. D. Long of the Public Health Service for kindly suggestions in treatment of the case.

#### BRIEF NOTES ON THE FORMATION AND ORTHOGRAPHY AND PRONUNCIATION OF MEDICAL TERMS.\*

By REV. W. H. MILLS, M. A., Cantab.

Mr. President, and members of this society, I have to thank you for the compliment you have paid me in asking me to read a paper at this meeting of your Association, and I have, at the same time, to put in a plea for your indulgence if I fail, as I very likely may fail, to interest you in the subject on which I am to address you. It might be called a literary rather than a scientific or practical subject, and yet it has both scientific and practical aspects.

Some weeks ago Dr. Beason, in the course of an address given by him at one of these meetings, alluded to the fact that, in later life, we often forget, because we don't care to remember them, facts which as medical students we were required to assimilate; and therefore, when some occasion demands a knowledge of those facts, have to relearn them.

I am reminded, in this connection, of an event which occurred at an English university, some forty-seven years ago. The results of an examination for some medical degree—I think it was the first M. B.—had just been published. I was only a freshman at the time, but I knew a good many of the examinees, and one of them, in particular, was an intimate friend of mine. So, when I saw his name in the list of successful candidates, I took occasion to pay him an evening visit of congratulation. I found him alone, but in his room were suggestions of a coming function, such things as bottles of champagne and boxes of cigars. And on his table was a pile of books, the meaning of which I had to learn. Well, I congratulated my friend and then got up to depart, saying that I saw he had a party in view. He wouldn't hear of my going. "You sit down," he said, "and we will teach your young idea how to shoot." Presently four or five more men came in, each bringing a pile of books, which were carefully deposited on the table. Well, we sampled the champagne and the cigars, and talked about things in general, and, in particular, about the examination. After a time there was a hush, broken by one word from our host, "notes." Promptly all the notes, which had been laboriously taken at lectures by those young idiots, went into the fire. Then followed more drinks and a solemn silence. The next was

\* Read before the San Bernardino Physicians' Club, May 23, 1913.

"botanies." Into the fire, amid shouts of applause—which made me gather that botany was not a favorite subject—went all the text-books on botany. They were followed, in due course, by manuals on chemistry, and physiology and anatomy, and so on. And the holocaust was consummated by the sacrifice of a copy of "Gray's Anatomy." Now Gray's Anatomy is a costly book, and, in England at any rate, a book for all time. So, when I saw this last offering, I ventured on a mild remonstrance. But the owner, though next day he deeply regretted his act, was beyond reach of argument. The sacrifice was completed.

Now that may seem a childish story, but it illustrates, I think, the temper which moves some medical students—in my time it moved many medical students—to acquire just such an amount of knowledge as shall enable them to rout the examiners, and then to celebrate their victory by banishing that acquired knowledge as quickly as possible from their minds. It may perhaps stir sympathetic chords in some souls here to-night.

One advantage, among the many advantages of these meetings, is, as it seems to me, that the papers read at them, and the discussions which follow, help us to revive memories of what we learned years ago in medical schools and in hospitals, and have more or less forgotten. I speak especially for myself, for my rustiness in such matters often appals me. But I take it that others also—men who are so busily engaged in practical work that they have little time for reading—find themselves at times more or less rusty in respect of some of the foundation truths on which the science of medicine is based. I don't propose to parade my own rustiness in respect of such matters. The object of my paper to-night is to revive memories of studies which preceded our medical studies, and, in particular, the study of what are called "Litterae humaniores"—the classical languages and arts.

I take it that the reason why our medical vocabulary borrows most of its terms from the Greek and Latin languages, is that these languages are a sort of Volapuk or Esperanto—a language which can be understood by educated men of all nations, no matter what their national speech may be. So, too, in mediaeval times, the language of the Law Courts was Latin. There has also, perhaps, been the idea that things medical should not be carelessly exhibited to the laity—an idea based, not so much on pharisaic notions of self-interest, as on a laudable desire to safeguard ignorant folk against an improper use of drugs and methods of healing.

Now, if the terms of our medical vocabulary are to be a true Volapuk—a true Lingua Franca—it follows that they ought strictly to be properly compounded words, and further, that they ought to be properly spelt and properly pronounced.

Let us take, first, the question of word-formation. It is a big subject, and I can only skirt it; for to go into its details would take not merely hours but days and weeks. But something may be said about it.

In a letter to the London Spectator, a few weeks ago, the writer, very properly objecting to such words as "pacificist" and "pacifist" as substitutes for "peacemaker," was unwise enough to suggest, as a better term, "paxamist"—a word which, though, to my amazement, it was commended by the Editor, is not merely a mongrel but also a monster. That letter, however, was not wasted. It called forth a protest from a philologist, who laid down three rudimentary rules for word-formation. "In coining new words," he said, "some regard should be paid to the following principles":

(1) The idea, which the new word is intended to express, should be truly connoted in its constitution.

(2) Languages, like liquors, should not be mixed.

(3) The ordinary rules of grammar should be observed; and, if possible, the result should be euphonious.

These rules are at once very simple and very useful and they go a long way. But I may add one more.

(4) In a compound word, made up of two nouns, the union of the nouns may not be interrupted by a preposition. Thus such a word as oothektektomy is wrongly formed:—Ovariectomy, by the way, violates rule 2; it is a mongrel, though some late Latin authors have coined a Latin *tōmē* from the Greek *Touy*. Now, when wrongly formed words have grown into inveterate use, it is very difficult, if not impossible, to alter them; the malformations have mostly to be endured. But, when the question is of recent words, or words as it were in the birth, it is surely most desirable that the rules of word-formation should be rigidly observed: that new words should be constructed on strict etymological lines; that recent malformations should be corrected; that wrongly formed words, claiming acceptance, should be rejected.

I can't help referring here to certain terms, used by outsiders who apparently want to find some substitute for the title "Dr."—such terms as *oxypath*, *osteopath*, *naturopath*. Now "*oxypath*" does not violate the rules of word-formation. But what does it mean? It means, as applied to a man, one who suffers sharply. One is tempted to think that a man, who takes this title, should be made to live up to it. Or, if you take a modified meaning, an *oxypath* is a man who is keenly sensitive. Now all doctors are in sympathy with their patients, and sorry for their troubles. But what is to be said of a man who parades this sensitiveness as a sort of advertisement—as a claim that patients should flock to him as assured of his sympathy with them? He should at any rate, I think, be compelled to treat his patients gratuitously. I don't know what an "*osteopath*" is, because I don't know what it is to suffer bones, or from bones—unless there is an allusion in this name to the time-honoured excuse, given by nursemaids who don't want to get up and run about with the children under their charge—"I have got a bone in my leg"; or unless there is an implied suggestion that the *osteopath* suffers from some bone-disease. There is this to

be said for these two words, oxypath and osteopath, that they are not mongrels. But among all the mongrel words that I have seen, I never saw a worse mongrel than naturopath. And what does it mean? Well, as I think Artemus Ward once said, "We all of us have a good deal of human nature in us," and human nature has bad, as well as good, aspects. "Suffer" seems to imply a bad aspect of human nature, and so the title "naturopath" might not unfairly be interpreted as equivalent to a notice—"keep out" or "Beware of the goat."

But—to get back to terms used by the medical profession—such a word as appendectomy is ruled out, not only by rule 4, but also by rule 2. I am not altogether persuaded that rule 4 should be strictly enforced. It is certainly strict *law*, but it is often disregarded, as Dr. Stedman has pointed out, in these days even at Athens—disregarded, i. e., at the chief Greek medical school of our time. But, supposing that we pull appendectomy through rule 4, we can't pull it through rule 2. For it is a mongrel, made up of the Latin word "appendix" and the Greek word *ektome*. Some a word as *skolekoeidektomy*, suggested (with a difference in the spelling) by Dr. Stedman, though it offends against rule 4, would observe rule 2; the word is not a mongrel. Or perhaps *appendexcisio*, though it too violates rule 4, might serve. Again "gastro-enterostomy," though not a mongrel, has a false termination, as the word "anastomosis" may remind us—though, as a matter of fact, if we took stomosis into partnership with the other two words, we should have to change the final—*is* into—*ia*; and coin the word—it is rather a mouthful—*gastro-entero-stomosis*. Another word that offends is "adiposis," a word made out of the Latin *adeps* and a Greek termination (*-osis*) tacked on to it. It is a mongrel. Such words as *gastrektomia*, *husterektomia*, *nephrektomia*, etc., though they violate rule 4, seem to claim acceptance on the ground of their convenience, and are, as a matter of fact, accepted by modern Greeks. And they do not cloak their meaning, as "gastro-enterostomy" in a measure does. "Sanitarium" may stand side by side with "pantorium." Speaking generally, I think that, monstrosities, which are rare, excluded, mongrel words are the most objectionable; and that, even when they have grown into use, an effort should be made to abolish them.

Next comes—perhaps it ought to have come first—the question of orthography. There seems to be a desire in these days to simplify spelling by eliminating diphthongs, especially *æ* and *œ*. Thus we write equal, era, eternal, economy, estuary, etc. That is, in a measure, allowable in the case of words used in ordinary speech. But is it allowable in the case of our medical Volapuk? "Any moderately educated Greek, or even Latin scholar," says a writer in the *Lancet*, "should be able to gather at first glance the meaning of 'anæmia,' but 'anemia' might suggest to international readers 'windiness'; and in the same way, 'pediatrics' might suggest the 'therapeutics of the feet.'" That is clearly true, and therefore, as it seems to me,

diphthongs should surely be retained; and any simplifications of spelling, which obscure the derivation of words, should surely be rejected.

And now I come to the subject on which I was originally asked to address you, the pronunciation of medical terms. It is a dependent subject, and therefore, I have taken it last. Here of course comes in a question as to the right pronunciation of Greek and Latin words. For some years in England, and, I imagine, here, an effort has been made to return to the original pronunciation of Latin words; and, what is called "the new pronunciation"—which is really the older pronunciation—is commonly taught in our schools and universities. In this "new" pronunciation, the vowels are pronounced pretty much as they are on the continent, and that is undoubtedly a great gain. Thus the termination *-itis*, is pronounced, as I believe it is here, "eetees." As for consonants, to mention three of them: *c* and *g* are always made hard—as they were in classical times—even before *e* and *i*, and *v* is pronounced as *w*—again in accordance with classical usage. Thus the Latin word for a citizen, which in my young days was pronounced "sivis," is now pronounced "Keeweess."

That brings to my mind another story—a story of what was said to have happened some 25 years ago in England. Two young professors went down from Cambridge to examine the girls' college at Hatfield. In the course of the examination, the subject at the moment being the pronunciation of Latin words, one of those young examiners asked if any girl could give him the proper pronunciation, and the meaning, of the word spelt *vicissim*, and pronounced, before the reform came in, *visissim*. Thereupon the whole school arose as one girl, and quite correctly, but blushing, replied—"wee-kis-im, by turns." That was the examiners' story, when they got back to Cambridge. But, in justice to those girls, I ought to add that, after sticking to their story for some weeks, those romancers confessed that they had made it up on their return journey. Again the story may appear childish, but it carries in it a sort of *memoria technica*—useful in its way.

I don't think that this reformed pronunciation has affected, to anything like its full extent, the pronunciation in England of medical terms, so far as consonants are concerned. One doesn't hear "woolwa" for vulva, or "kell" for cell, or germ (with a hard *g*) for germ, though one does hear "bakillus" rather than "basillus," and "leukokyte" rather than "leucosyte." And, so far as the consonants are concerned, the reformed sounds of *c*, and *g* and *v* would hardly help matters, for those changed sounds don't obtain on the continent. But, whether the old pronunciation or the new (i. e., the older) pronunciation is used, the *quantity* of vowels, whether in England or on the continent, is *never changed*. A long vowel is considered, and made, as long now as it was in the days of Cicero, whom I ought, I suppose, according to purists, to call "Kikero." That Kikero—pronunciation, by the way, suggests again that, where words derived from the classical languages have



been thoroughly Anglicised by the usage of centuries, it would be mere pedantry to change them, at any rate in ordinary speech; e. g., "medicinal" ought strictly to be pronounced "medicinal." But who would wish to have it so pronounced? Who would willingly call Virgil "Waregeel," or Cæsar "Kasar," though the Germans rather have us there? But medical speech is not common, or conversational, speech. It is technical, international speech. It should make medical words as readily understood by all nations when spoken as when written. Therefore, putting aside the classical pronunciations of c, and g and v, as not now international, the continental pronunciation of vowels and consonants should be followed; and, whether that pronunciation is followed or not, the *right quantities of vowels* should always be observed.

I beguiled certain hours on my voyage from Liverpool to Galveston by drawing up a list of false quantities often heard in England, being incited thereunto by a fellow passenger, a Scotch doctor, whose retentive memory embraced many such mispronunciations, and I have added some more examples which have come to my ears here. The list is a very imperfect one, but it may serve as a sample list.

Pituitary for pituitary; umbilicus for umbilicus; diabetes mellitus for diabetes mellitus; abdomen for abdomen; intestinal for intestinal; angina for angina; duodenal for duodenal; tibia for tibia; vertigo for vertigo; vaginal for vaginal; sequela for sequela; reflux for reflux; "jinnycology" for gynaecology; cervical for cervical; paræsis for paræsis; trachæa for trachæa; ileum for ileum; respiratory for respiratory; neurasthenia for neurasthenia; conium for conium—by the way, if Socrates had heard Kōneion thus mispronounced, he might have refused to drink his final draught, on the ground that the Law could not compel him to swallow a pine cone; "chirpody" (ch. as in cheese) for "keiropody"; "sinnyattograph" for "kinemätograph"; syncope (to rhyme with hope) for syncope.

To these words I may add three, in which America corrects our English pronunciation: Skedule for shedule; théâtre (though the word is wrongly spelt theater) for théâtre; and apparently (though here our English pronunciation is also heard) wounds, as wownds, for woonds.

Teesis, if p is pronounced before the t—a matter on which I am uncertain—corrects our English phthisis. Without a p it recalls to my memory the tizzis and tizzical, which were used in England 100 years ago, and were perhaps brought over by the Pilgrim Fathers.

Well, that ends my list, and it must end my paper too. I must apologize for certain frivolities which have crept into my paper—frivolities which may perhaps be excused by the weather, which, in my case, makes hard thinking a hard job. For I am not yet fully acclimatized—I beg pardon, acclimated—to the weather conditions (though I enjoy them with all my heart) of the great Pacific Coast, and in particular, of Southern California.

## ARTIFICIAL SYNOSTOSIS OF THE TUBERCULOUS SPINE.\*

By JAMES T. WATKINS, M. D., San Francisco.

I ask you to ponder these four texts which I quote verbatim from the classics of orthopedic literature.

Bradford and Lovett's Text Book, 1911 edition, "On the Nature of Potts Disease": "It will always be regarded as one of the most formidable of diseases, its long course, the deformity entailed, the severity of the complications and the occasional termination in death give both to the surgeon and to the non-professional public a natural dread of the affection."

Henry Ling Taylor's Hand Book on "The Duration of the Disease": The disease is rarely cured in two years, and then only in the cervical spine. In other regions spinal support for four to five years, or more, is necessary. The course in untreated cases is very long—from five to twenty years.

Painter (Goldthwaite, Painter and Osgood): "Diseases of Bones and Joints" on the malignancy of Spinal tuberculosis.

It tends to recur after an apparent cure in a considerable proportion of cases—the average quiescence of cases being 12½ years.

Wullstein, Joachimsthal's Handbuch. "Most authors agree that after the 40th year of life a cure is no longer to be expected."

Ely's studies of the pathology of tuberculosis of bones and joints would seem to have determined that the disease appears in those portions of bones which contain lymphoid tissue and in the synovia. This lymphoid tissue, or red marrow, is present in the bodies of the vertebrae and in the ends of the long bones. It is not present in the vertebral laminae nor spines, neither is it found in the shafts of the long bones; nor does tuberculosis primarily attack these structures. It has further been remarked that when, from any cause, such as immobilization of a joint, function has been prohibited for a sufficiently protracted interval, or, still better, when through an erosion of the ends of contiguous bones, function has actually been destroyed, these synovial and lymphoid tissues undergo modification into the less highly organized fibrous connective tissues.

The fibrous connective tissues are immune to tuberculosis. Consequently if tuberculosis has been present in or about a joint it will rapidly disappear once that joint has been artificially ankylosed; the one exception to this rule occurring when these tissues have been rendered temporarily vulnerable to tuberculosis by the presence of secondary pyogenic infection.

Turning now to a consideration of tuberculosis of the spine, much information may be gathered from Brackett's studies of the manner in which healing occurs in the various types of spinal tuberculosis and after varying degrees of deformity.

In cases where there has occurred extensive destruction of bone, and particularly of the anterior portions of the vertebral bodies, with consequent fusion of them and angular deformity, a large

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wedge of new bone may be thrown out in the angle of the deformity thus opposing an increase of the latter and enlarging the bearing surfaces of the opposed vertebrae. In other instances in place of a solid wedge of new bone, buttress-like bridges span the angle made by the bend in the spine.

Where there has been less destruction of bone and less consequent distortion, healing may take place in one of two ways. Either new bone is thrown out on the anterior and lateral aspects of the bodies of the diseased vertebrae, thus fusing them and broadening their surfaces of contact, or—there may occur a fusing together of all the laminae and spinous processes of the diseased vertebrae. And this fusion takes place despite the fact that the spinous processes and laminae may not have been involved in the tuberculous process. Such a fusion when it occurs must prevent all motion in the segment of the spine involved.

Except in those rare instances which present an almost immediate arrest of the pathological process (and which it would perhaps be safest to class as mistakes of diagnosis) prevention of deformity while healing is taking place in either of the last named ways, may be said to be the purpose of conservative orthopedic treatment. But while healing without apparent distortion can and does occur, to quote Wullstein again, "Deformity to a variable degree is the rule."

I will not detain you now with a discussion of the varied means, the special beds, the jackets, corsets, cuirasses, braces and the like, which we have employed in the past in the effort to arrive at our end. They were all devised in the effort to apply the two fundamental principles which lie at the basis of treatment, i. e., immobilization and relief from pressure. Because of mechanical obstacles, their success was comparative. As a matter of fact neither absolute fixation nor complete removal of weight bearing (except in recumbency) was by these means attainable.

To-day we enter upon what I firmly believe will prove to be a new era in the treatment of spinal tuberculosis. It is my privilege to direct your attention to a procedure which, while it is new with us, has been tested for two years by our colleagues in the East, a procedure which promises to cut short the orthopedic treatment from years to months, a procedure which if successful must prevent the increase of deformity and incidentally improve the cosmetics of the distortion present, a procedure which enables us to replace the inaccurate, ill-adjustable, inefficient, easily broken, oftentimes insanitary, and always irksome external splints and braces of the past, by a self adjusting, always working, absolutely immobilizing, internal or osseous splint, which grows with our patient's growth, which strengthens with his strength, and which represents in itself the result of stimulating and marshaling into a sustained effort those forces which nature had manifested in her blind gropings toward a cure.

This internal or osseous spinal brace is obtained by causing a synostosis (or artificial ankylosis) of the posterior portions of the diseased vertebrae and of the healthy ones next above and next below them.

It may be accomplished either by Hibbs' operation or by that of Albee. There is some question of originality affecting these operations as well as of priority in the field. This fortunately does not interest us any more than do insignificant modifications of them put forward as original work elsewhere. As a matter of fact if time shows the principle upon which they are based to be surgically and pathologically sound there will be credit enough for everybody.

Briefly Dr. Hibbs' procedure is as follows: Through a posterior median incision the spinous processes of the diseased vertebrae as well as those of the two healthy vertebrae next above and the two healthy ones next below them are uncovered. Their tips are denuded of cartilage and the periosteum reflected outward on each side as far as the transverse processes. The interspinous ligaments and the ligamenta subflava are partly dissected out and the rest thrust forward on the ventral surfaces of the laminae. Then a series of interosseous bridges are created at either side by partially chiseling off pieces from the laminae and turning the free ends of these pieces down to rest on the upper parts of the laminae next below.

Next the upper two-thirds of the base of each spinous process is cut through and the remaining portion fractured green stick-wise. The spine is then bent down so that the denuded tip may be inserted into the cleft at the base of the spinous process next below.

Finally the periosteal sheets at either side are brought together in the middle line over this osseous mosaic and sutured with 30 day chromic gut. The skin is sutured with horse hair and the patient put back to bed on his stretcher. Hibbs at once applies a spinal brace with the uprights somewhat farther apart than usual.

The patients are kept recumbent for 8 weeks and then allowed up, wearing one or other protective appliance. I might add that whereas we employ a jacket in the after treatment Hibbs requires his patients to wear a spinal brace for some time after they are up and about.

Dr. Albee uncovers the same number of spines through an identical incision and then chisels in them a shallow longitudinal groove a bit to one side of the middle line. Into this groove he introduces a bone graft chiseled from the crest of the tibia. This graft has its periosteum intact and is excised in such a way as to include some of the marrow. The graft is fixed in its new bed by linen sutures. We use sutures of chromic gut. The wounds are then closed in the usual way and the patient put to bed. The next day he is placed upon a Bradford frame to remain there eight weeks.

Orthopedic surgeons in the East seem to be about equally divided in their opinions regarding the relative excellence of these two operations. Dr. Lovett, for example, is said to consider Dr. Hibbs' method to be scientifically the more correct.

On the other hand the ingenious Dr. Ansel Cooke of Hartford thinks that, to use his own words, "Albee has it on Hibbs."

Here in San Francisco Dr. Sherman considers

Dr. Albee's to be the more surgical procedure, whereas in the light of Macewan's researches, I have seemed to see at least theoretical grounds for favoring Dr. Hibbs' method. The Boston men employ the Hibbs operation in the thoracic segment and the Albee operation in the lumbar spine. We have done the same thing, and as a matter of fact as far as our present day observation goes the results of each operation when properly performed are gratifying in the highest degree. There is no hemorrhage, beyond some venous oozing. We have never yet tied a vessel. And those of you who have timed our later operations done under familiar surroundings upon children have advised me that each operation from incision to final dressings had occupied but thirty minutes.

Of course it is too soon, and will be for perhaps another decade, to speak finally of the results from these operations. Their success will not depend however upon the view here entertained of the pathology of bone tuberculosis. Even should we have to rewrite our pathology, the internal splint must remain mechanically a vast improvement over the external splint and where it does fail, the fault must, it seems to me, be sought in the technic of the operator, and not in the surgical principles involved.

The more I study this question the firmer does my conviction become that we are in the presence of one of the greatest advances in bone surgery. I do not see how the principle upon which it is based can fail unless we are prepared at the same time not only to place an entirely different interpretation upon the observed phenomena of osseous repair, but also to deny Wolff's laws for the transformation of bone, and finally to renounce utterly our present views of osseous growth; views based for the most part upon Macewan's clinical studies of thirty years, verified by countless animal experiments and enunciation by him in that wonderful book "The Growth of Bone".

Personally I do not expect ever to be called upon to make these renunciations.

**History of a Case and Stenographic Report of an Operation for Stiffening the Tuberculous Spine, Performed by Dr. James T. Watkins, Before Members of the California State Medical Association at Stanford University Medical School, April 19th, 1913.**

Before considering the status of the patient upon whom I shall presently operate I desire particularly to express my thanks to the dean and faculty of Stanford University Medical School to whose courtesy I am indebted for this opportunity to appear before you here.

I shall not enter into a discussion of the indications for this operation now. I did all that in my paper before the State Society on Wednesday. While I am operating, the X-ray of this patient's spine will be handed about among you. You will observe a pear shaped shadow overlapping the 10th and 11th thoracic vertebral bodies. It indicates a tuberculous abscess, which because of its density, is I should say pretty completely calcified by this time.

Briefly her history is as follows: R. L., age 42. Profession, cutter of women's underwear.

**Family History**—Father died of heart disease, mother living, brother said to have pulmonary tuberculosis.

**Past History**—Uneventful until 18 years old when she had nervous prostration one winter. Attributes

it to overwork. Was absolutely well until two and a half years ago.

**Present History**—Her present trouble began two years ago last January, that is January 1911, with throbbing in her back which came on every night not long after retiring and continued for two hours when it would cease not to recur again until the next night. She says it was like a "jumping toothache." In July of that year she had jaundice and was sick for three weeks. At this time she felt a great deal of pain in her back; some doctors said she had rheumatism.

Lurline baths and massage were prescribed. At the Lurline baths the rubber noticed a prominence at one part of her spine. Beginning with January 1912, she was given electricity to her spine (galvanism) for two and one-half months. At this time her whole back became so sensitive that she could not pull her bed covers over her chest nor turn a water faucet with either hand. Late in March an X-ray was made of her spine. The diagnosis then was, she says, of a spinal tumor. About this time she was referred to me. She was then scarcely able to walk, could not bend her body in any direction except at the hips, could not lift either foot to place it upon a stool because of muscular spasticity. When she got down on her knees could only with the greatest difficulty get up again; presented tremendously exaggerated knee jerks and ankle clonus.

Physical examination showed a distinct kyphos with its apex at about the 10th thoracic vertebra. She had been in constant pain day and night for several months. She was said to have lost a great deal of flesh and strength, to have no appetite, to have night sweats, and thought she had had some evening fever.

**Treatment.** On April 3d a plaster of paris jacket was applied in suspension which grasped her pelvis just above the trochanters and extended upward to support the chin and occiput. Wearing this jacket the patient was recumbent for six months. At the end of that time her general condition had improved, her appetite was better, her sweats had disappeared, her pain recurred only at intervals.

September 15, 1912, the jacket was removed and she was placed upon a curved stretcher reinforced by two parallel longitudinal pads of folded newspaper an inch apart permitting the spinous processes to project downward between them.

April 15, 1913. She has been seven months on the stretcher, or over 12 months recumbent altogether. Her general health is very much improved, though she is still exceedingly thin. For many months she has had no pain at all but she still does not show that anxiety to get up which is manifested by persons in whom the process is rapidly healing. Also it is apparent that despite persistent recumbency her kyphos has increased in size. Evidently then the most efficient form of treatment known to us heretofore has in almost thirteen months relieved her subjective symptoms only, and from what we know of the results of treatment in countless other cases must be persisted in for three to five years more before we can even hope to obtain a cure. Since she is over the age limit—40 years—it is doubtful whether we could by these methods obtain a cure at all. Thanks to this new operation we are not without hope, however.

Now what we aim to do here is to create an internal or osseous splint which will actually and completely immobilize the diseased portion of the spine. We believe that if we can do this, changes will occur in the structure of the vertebral bodies and that as a consequence of these changes they will no longer be vulnerable to tuberculosis.

What makes us think that we can create such a splint by operative means is our knowledge of the nature of the growth and repair of bone; knowledge for which we are indebted to the studies of Sir William Macewan. I think that no one who occupies himself with bone surgery can afford to



be without Sir William's book "The Growth of Bone." I have read it not once but many times—and they were not enough.

No tissue responds more readily to stimulation than osseous tissue. Under the influence of appropriate stimuli the cells in the interior proliferate, enter the Haversian canals, and appear in the comparatively loose areola tissue beneath the periosteum. Here they find room to expand and undergo further proliferation. These are the osteoblasts. It is their special province to cause a deposition of lime salts on all sides of them.

Again it has conclusively been shown that small diaphyseal grafts when placed under favorable conditions proliferate from all sides. That is, each of them becomes an independent center of ossification. The special application of this observation will appear directly.

Until lately the function of the periosteum was misunderstood. It is now known that it has not, as was formerly supposed, a marked osteogenetic function. Its main purpose is to act as a limiting membrane to the osteoblasts issuing from the Haversian canals. Blood vessels and nerves from it enter the Haversian canals and help nourish the bone, which, however, gets its main blood supply from the nutrient artery.

In view of these observations we propose to perform the following operation (a) We will strip the periosteum back from the spinous processes and laminae as far as the transverse processes for a space including the vertebrae forming the kyphos and the two healthy vertebrae above and the two below it. (b) We will then partially separate strips of bone from the lower borders of the laminae and displace their free ends downward to form osseous bridges connecting each lamina with the lamina below it. (c) We will then make a green stick fracture of each spinous process, after severing the upper half of its base, and will then introduce its apex into the cleft in the base of the spine next below it. (d) Finally we will draw the two laterally displaced layers of periosteum and overlying muscles together over the bones in their newly made relations and stitch them tightly together, creating a sort of peristial tube or sheath.

If we perform these steps properly we may, in the light of what we already know, expect that stripping back the periosteum has both stimulated the production of osteoblasts and made room for their further proliferation and development, while the plastic work on the inter-laminal bridges and spinous processes has created just so many fresh centers of ossification; the ossific process being limited and given definite shape by the new arrangement of the periosteum. As a consequence, by the time an ordinary fracture would have united our patient should have developed a strong bony splint supporting and immobilizing the kyphos and extending two vertebrae above and two below the diseased area.

I may add that a child under our care upon whom this operation was done is now dying of a general miliary tuberculosis. This general condition had begun to manifest itself just before we operated.

I shall hope to be able to present the specimen from his spine to the State Society next year.

If you will kindly bring in the patient we will begin our operation.

You will wonder why we use these funereal lined coverings. We use black sterile sheets to cover the patient so that the field of operation may be brought out into bolder relief by contrast. It is particularly valuable where we use iodine to render aseptic our operation field. I am told there are optical reasons for preferring green sheets to black and expect to experiment with that color later.

To minimize hemorrhage it is necessary to make our incision in the middle line exactly down to the spinous processes. But the skin and subjacent tissues play back and forth over the spines making a straight incision difficult of accomplishment. However, by placing a hand palm down in this

way on the back at each side of the spine and retracting away from it you see we get pretty fair fixation and are able to make our incision down to and in fact into the tips of the spinous processes.

The Boston men instead of our straight median incision employ a semi-elliptical skin incision. When they have dissected this back they make the usual median cut through the subjacent structures.

We employ this skin flap in executing the Albee operation. The practical point to bear in mind in making it is that only the skin must be included in the flap. If you cut through the fascia you will have annoying hemorrhage.

We have now completed our incision. Next with sharp Collin periosteal knife we separate the periosteum first from the tips of the spinous processes and then strip it up and out as far as the transverse processes. The intervals between the processes we clip through with the Mayo scissors.

Dr. McChesney lately returned from the East where he saw both Doctors Hibbs and Albee perform their operations. I recall Dr. McChesney's telling me that Dr. Hibbs said he was as careful in his treatment of the periosteum as he would be in performing the toilet of the peritoneum. Do I quote you correctly, Doctor?

Dr. McChesney: "Yes, that is exactly what Hibbs said."

Dr. Rixford: "What did he mean by that?"

Dr. Watkins: "Merely, I take it, that he tried hard to get it off with as little shredding as possible."

We have finished one side and pack it with gauze to stop oozing, while we do the other. Doctor McChesney did the first of these operations which I have seen. In all we have done fourteen. This is the fifteenth. We have gradually cut down our time of operating from an hour till this morning Doctor Sherman and Dr. McChesney did one in twenty-five minutes. With every case one learns something. You will observe how much more easily I am peeling off the periosteum and muscle insertions on this side by working from below upward than I was able to do on the other side where I did not specifically work in a given direction. In children denudation is easier. The periosteum is thicker. The ends of the spines are covered with cartilage which peels off easily, and the muscle attachments are insignificant.

Dr. Rixford: "What are you going to do with the inter-spinous ligaments? I ask for information."

Dr. Watkins: "Dissect them out as carefully as possible."

We will also free the ligamenta sub flava and push them forward on the ventral surfaces of the laminae.

I think we have our periosteum peeled off sufficiently. Let us pack that side too. If you will give me a knife I will dissect out the interspinous ligaments.

Dr. Rixford to the Nurse: "Give Dr. Watkins my big cartilage knife. Try that, Doctor."

Dr. Watkins: "Thank you, this is fine. Dr. Hibbs lays particular stress upon the importance of completely clearing away these ligaments. See here these cartilaginous interspinous masses. They represent nature's way of beginning a cure. In time they would ossify, but it would be a matter of years."

Dr. McChesney: "Look out you don't get down too deep."

Dr. Watkins: "I will. However, we have opened the spinal canal more than once in performing this operation—but without ill effect."

Now we are through with that.

Now with the special chisel we chisel free strips of bone from the lower borders of our laminae and bend them downward so that they bridge the interval between these laminae and the laminae next below them.

Now with these Hibbs forceps I snip off the tips

of the spines. Now beginning at the bottom of the wound I bite through the upper half of the base of each spinous process, and without removing the forceps use them as a lever in fracturing the process through its base. It is then bent downward. Each process in succession is treated in like manner and its apex introduced into the cleft in the base of the process next below. So much for the bones.

I shall now bring the two lateral sheets of periosteum and muscle over and suture them together in the middle line using chromic gut No. 1 to make a continuous buttonhole suture. We next close the skin with horse hair. Flat sterile dressings. Did you touch the line of suture with iodine, Nurse?

Nurse: "Yes, Dr. Watkins."

Dr. Watkins: "Cover the wound and wash her back off with alcohol. She can go back on her curved stretcher."

How much time did we take?

Dr. Katherine Palmer, anesthetist: "The actual time of operation was twenty-five minutes."

## RECENT ADVANCES IN THE TREATMENT OF DACRYOSTENOSIS.\*

By LOUIS D. GREEN, M. D., San Francisco.

Operative procedures for the relief of dacryocystitis, by making an artificial communication between the tear duct and the nose, date back to the time of Galen and Celsus, but it is only in recent years that any real progress has been made in this direction.

Probing and slitting the duct and canaliculus, while curative in some cases, usually results in failure besides necessitating a painful and prolonged course of treatment. Extirpation of the sac, though more frequently successful, is also undesirable in that it interferes with or destroys the physiological function of the lacrimal apparatus, often failing to abolish the epiphora and therefore frequently demanding a partial or complete removal of the lacrimal gland, and finally is apt to leave a scar in a rather conspicuous place.

Caldwell in 1893, Killian in 1899, and Passow in 1901 attempted to produce free drainage by opening up the duct through the nose but at the expense of the anterior end of the inferior turbinate. While this was a step in the right direction it did not prove entirely satisfactory. This operation not only destroys part of a very important organ, but often fails to reach the seat of trouble, as the stenosis is usually at the junction of the sac and duct, a point higher than that reached by this method.

Toti, in 1894, attempted to obtain the desired end by making a skin incision over the region of the sac and then producing a communication with the nose, but got good results in one half of his cases only.

In 1910, West published a method by which he made an opening from the duct into the nose without sacrificing the anterior end of the inferior turbinate. This likewise has proven unsatisfactory in that the stenosis is usually situated

above this point, and he had to reoperate in about half of his cases. Since then he has entirely discarded this method and now makes the opening directly into the sac. He reports over 100 cases with 90% good results.

Of all the methods so far devised, that described by Bryan and the latest procedure of West, with some slight modifications, are the most rational and have so far proven the most satisfactory. They have the advantage of producing permanent free drainage into the nose above the



Fig. 1. (A) Middle turbinate. (B) Inferior turbinate. (C) Lateral bony nasal wall. (D) Muco-periosteal flap turned down over inferior turbinate. (E) Lacrimal sac.

point of stenosis and without destroying any important tissues. Epiphora, dacryocystitis, dacryoblenorrhea, phlegmon, and fistula have all been successfully treated in this way.

**Technique**—After making measurements on the living as well as on a large number of cadavers and skulls, the writer finds that the following anatomical landmarks will greatly assist the operator in locating the field of operation. The nasal process of the superior maxillary bone and lacrimal bone form the fossa for the lacrimal sac and a point one quarter inch below the attachment of the middle turbinate to the lateral wall of the nose and on line with its anterior extremity, will about locate the middle of the lacrimal fossa. Just anterior to this is a slight elevation which becomes more conspicuous when the mucous membrane is raised. It is not always marked, though present in most cases.

Under cocain and adrenalin anesthesia the mucous membrane and periosteum of this area are raised in the form of a somewhat quadrilateral flap with its attachment below and turned down over the inferior turbinate. This will expose the bony nasal wall of the lacrimal fossa. With appropriate chisels or burrs the bone is removed till the sac with its membranous

\* Read before the San Francisco County Medical Society. Eye, Ear, Nose and Throat Section, August 26, 1913.

attachments is clearly exposed. This is firmly grasped with forceps and a piece from its nasal wall excised. If pus is present, it will immediately exude through this opening into the nose. Care must be taken that the opening is made large enough as otherwise granulation tissue will form and close it up. Before the mucous membrane is replaced in position, a piece of the flap, at its postero-superior angle is excised so as not to occlude the opening into the sac. The nose is then packed



Fig. II. Lacrimal sac (diagrammatic), dotted line showing part of sac excised.

with gauze which is left in place till the following day when it is removed.

With a lacrimal syringe introduced into the



Fig. III. (A) Flap replaced in position with its postero-superior border excised and showing opening into sac.

canaliculus, the sac is irrigated daily until healing is complete when it will be found that a permanent opening exists and the condition cured.

#### LITERATURE

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## SOCIETY REPORT

### BUTTE COUNTY.

The regular monthly meeting of Butte County Medical Society was held Tuesday, December 9th, at 8 p. m. at the office of Dr. Gatchell at Chico. President, Dr. P. L. Hamilton, in chair. Members present: Drs. Baumeister, Browning, Enloe, Hamilton, O. Stansbury, M. P. Stansbury of Hamilton City, E. F. Gatchell of Chico, Dr. Cornell of Stirling City and Dr. Charles Landis of Chico.

The following officers were elected for 1914: Dr. Edward Baumeister, President; Dr. M. P. Stansbury of Hamilton City, Vice-President; Dr. Ella F. Gatchell, Secretary-Treasurer; Dr. O. Stansbury of Chico and Dr. J. H. M. Karsner of Oroville on Board of Censors. Dr. Charles Landis was elected to membership.

The meeting was devoted entirely to business and plans for the ensuing year whereby the interest of the members might be aroused and the meetings made a benefit to all.

ELLA F. GATCHELL, Secretary.

### CALIFORNIA ACADEMY OF MEDICINE.

The regular meeting of the Academy was held in the Library of the San Francisco County Medical Society on the evening of October 27th, when the following program was given:

The Large Personal Factor in Blood Pressure Determinations by the Oscillatory Method. E. S. Kilgore. Discussed by H. W. Gibbons and H. L. Whitney.

At the regular meeting of the Academy, held on November 24, a paper entitled "The Economic Value of a Life" was read by James L. Whitney and discussed by P. K. Brown.

### FRESNO COUNTY.

At the October meeting of the Fresno County Medical Society a very cordial invitation for the Society to meet with the medical profession of Hanford in November was extended by Dr. Charles Rosson, an affiliated member of the Fresno Society. This invitation having been gratefully accepted on the evening of November 4 about fifteen Fresno medicos took automobiles to Hanford, thirty-three miles distant, reaching there about 8 p. m.

The meeting was held at the residence of Dr. Rosson, with enough Hanford physicians present besides the Fresno contingent to total about thirty-five. Several new members were added to the Society, causing Dr. Aiken to remark that he regretted these names were not being enrolled in an active prosperous Kings County Medical Society instead of that of Fresno. This meeting was intended to be largely social, complimentary to the Fresno Society, and was so conducted.

Some very amusing and instructive personal experiences were related, wholesome truths not a few. Dr. Rosson, Sr., of Tulare gave a very interesting account of his early surgical experiences, some of the results of which, would do credit to



our most distinguished surgeons of today. A most sumptuous banquet was served accompanied with "grape juice" where good cheer and the most cordial professional fellowship prevailed, until 11:30, when the meeting adjourned with a rising vote of thanks to Dr. Rosson for having made possible such an enjoyable and profitable meeting.

G. H. A.

#### PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of October, 1913, the following meetings were held:

##### Section on Medicine, Tuesday, October 7th.

1. A bed seat to be used in conjunction with a back rest, and devised to prevent patients who are required to sit up, from sliding down in bed. J. T. Watkins.
2. Indications for Vaccine Therapy. E. C. Dickson.
3. Prophylactic and Therapeutic Use of Vaccines in Typhoid Fever. F. P. Gay. Discussed by R. Brooke, E. S. Kilgore, G. E. Ebricht, O. Zaicheck and A. B. Spalding.

##### General Meeting, Tuesday, October 14th.

1. Demonstration of the end results of an operation performed for the correction of multiple deformities following an infectious arthritis of the joints of the foot and of the toes. J. T. Watkins.
2. Case of Secondary Carcinoma of Axilla. H. B. A. Kugeler.
3. Case of Ludwig's Angina Successfully Treated. H. M. Sherman. Discussed by Alfred Newman.
4. Congenital Dislocation of the Hip and Extensive Skeletal Tuberculosis, with demonstration of patient. H. M. Sherman.
5. Clinical Experience with Leucocytic Extract (Hiss). H. B. Reynolds. Discussed by W. Ophuls.

##### Section on Surgery, Tuesday, October 21st.

1. Anastomosis of Hypoglossal and Facial Nerves for Paralysis Following Gun Shot Wound of Ear. Cullen F. Welty. Discussed by C. C. Levison, H. M. Sherman and W. F. Schaller.
2. Carcinoma of Rectum removed four and one-half years ago; Hypertrophied Prostate recently removed from same patient; Method of After Treatment of Enucleation of Prostate. Harry M. Sherman. Discussed by M. Krotoszyner, M. Silverberg, A. Newman and C. C. Levison.

##### Caesarian Section.

3. Indications for. A. B. Spalding.
4. Prognosis and Complications of. R. K. Smith.
5. Rupture of Uterus Following. L. I. Breitstein. Discussed by T. D. Maher, A. S. Keenan, M. Abrams and J. D. Simpson.

##### Section on Eye, Ear, Nose and Throat, Tuesday, October 28th.

1. Review of an Article by R. Goldman on the Treatment of Chronic Tonsillar Disease. Henry Horn.
2. Demonstration of Polyp from Naso-Pharynx of an Eight-Year-Old Child. J. J. Kingwell.
3. Some Late Effects of the Septum Operation. H. Y. McNaught. Discussed by C. F. Welty, M. W. Fredricks, H. Horn and J. J. Kingwell.

#### PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of November, 1913, the following meetings were held:

##### General Meeting.

Tuesday, November 11, 1913.

1. The Medical and Social Aspect of Borderline and Psychopathic Children. William Palmer Lucas. Discussed by L. Porter, E. C. Fleischer, J. L. Whitney, R. L. Richards, W. C. Alvarez and R. K. Smith.
2. The Binet-Simon Test. Ernest Bryant Hoag. Discussed by Grace L. Boalt, Adeline Brown, W. P. Lucas and L. Porter.

##### Section on Surgery.

Tuesday, November 18, 1913.

1. Arthritis. Leonard Ely. Discussed by C. G. Snow, H. M. Sherman, E. Rixford, K. Pischel, J. Rosenstirn, R. L. Wilbur, W. Ophuls, W. I. Baldwin and W. C. Alvarez.
2. Hygienic Shoeing. C. C. Crane. Discussed by J. T. Watkins, L. Ely, E. Rixford, J. Rosenstirn and S. T. Pope.

##### Section on Eye, Ear, Nose and Throat.

November 25, 1913.

1. Exhibition of Eye Cases. K. Pischel. A case of an 83-year-old man with synchysis scintillans of the right eye and cataract operated in left eye 25 years ago by the late Dr. Ferrer, without iridectomy. The sight is 5/5. The speaker drew attention to the excellent work done in San Francisco by some oculists of the former generation. B. Two cases of injury by pieces of steel entering the eyeball. In the first case the piece of steel was extracted from the vitreous with the big magnet and the traumatic cataract removed. The sight is now <5/6.

In the second case a piece of steel had entered the eyeball 26 years ago, causing only a few opacities of the vitreous. The sight and field are normal. The foreign body was located by Dr. Freytag 2 mm. outside of the eyeball.

2. Eye Symptoms Associated with Oxycephalus or Peaked Skull. W. F. Blake. Discussed by M. Kerschbaumer and J. Rosenstirn.

#### THE TWENTY-NINTH ANNUAL MEETING OF THE NORTHERN DISTRICT MEDICAL SOCIETY

Was called to order by the President, D. H. Moulton in the Hotel Sacramento, at 11 a. m., November 11, 1913.

The names of Drs. H. D. Barnard and E. H. Pitts were proposed for membership. Their names were referred to a board of two censors, Drs. J. H. Parkinson and R. A. Peers appointed by the chair. An address of welcome was then delivered by Dr. S. E. Simmons.

- (1) First paper on Dysthyroidism by Dr. E. C. Turner of Sacramento. Discussed by Drs. Twitchell, S. E. Simmons, Gundrum and Jones.

- (2) Second paper on the Butyric Acid Test in Diagnosis by Dr. F. F. Gundrum of Sacramento. Discussed by Drs. Twitchell and Turner.

- (3) Third paper on A New After Treatment of Poliomyelitis by Dr. D. H. Moulton of Chico. Discussed by Drs. Jones, Cox, Culver, Hanna.

Moved by Dr. Peers, seconded by Dr. Culver that this paper be sent to the State Journal for publication. Carried. Meeting then adjourned for

luncheon tendered by the Sacramento Society for Medical Improvement.

Afternoon session began at 2:15, Dr. Moulton presiding. Drs. H. D. Barnard and E. H. Pitts having been favorably reported on by the censors were unanimously elected to membership.

Fourth paper on Auto-Intoxication was read by Dr. T. H. Stice of San Jose. Discussed by Drs. Gundrum, Watson and Loizeaux.

Fifth paper on Surgery of the Gall Bladder by Dr. A. M. Henderson of Sacramento. Discussed by Dr. James.

The society then proceeded to the election of officers for the ensuing year. The following officers were unanimously chosen:

President, J. W. James, Sacramento; first vice-president, R. N. Bramhall, Fair Oaks; second vice-president, T. H. Stice, San Jose; third vice-president, C. B. Jones, Sacramento; secretary, E. C. Turner, Sacramento. Censors—W. E. Briggs, A. M. Henderson, Sacramento; W. E. Bates, Davis; D. H. Moulton, Chico; W. S. Langdon, Stockton.

Moved by Dr. Parkinson, seconded by Dr. James, that the place of the June meeting next be left to the incoming president and secretary to decide upon.

Moved by Dr. C. B. Jones, seconded by Dr. Stice, to have the secretary send copy of minutes to Dr. P. M. Jones for publication or mention in the Journal. Carried.

#### SAN JOAQUIN COUNTY.

The regular monthly meeting of the San Joaquin County Medical Society was held at the residence of Dr. R. T. McGurk, Friday evening, October 31. The following members were present: Drs. W. J. Young, Lynwood Dozier, R. R. Hammond, H. E. Sanderson, Minerva Goodman, J. T. Davison, F. P. Clark, Mary Taylor, Dewey R. Powell, R. B. Knight, L. R. Johnson, Hudson Smythe, Margaret Smyth, E. A. Arthur, Barton J. Powell, C. R. Harry, J. E. Nelson of Lodi, G. G. Hawkins of Ione and R. T. McGurk, with Dr. William Fitch Cheney of San Francisco as guest.

A communication was read by the secretary from Mrs. D. G. Hasses, secretary of the Woman's Council of Stockton, requesting a donation from the Medical Society as a prize at the Better Babies' Show. Upon motion, seconded and carried, the communication was ordered laid on the table.

At the conclusion of the routine business Dr. William Fitch Cheney was called upon to read his paper "Syphilis of the Liver Imitating Cirrhosis." Needless to say, the paper was well presented and was accompanied by case reports showing the scope of Dr. Cheney's observations and deductions. Several members of the society took part in the discussion, reporting cases in their practice, which showed the efficacy of anti-syphilitic treatment when other methods failed.

Upon completion of the discussion, the meeting was adjourned and the members were invited to the dining room to partake of the repast provided by Mrs. McGurk.

R. T. McGURK, Secretary.

#### TULARE COUNTY.

The November meeting of the Tulare County Medical Society was held in Visalia, November 16. The society had as its guest Dr. Philip King Brown of San Francisco. After a Spanish banquet the regular monthly session was held at which Dr. Brown gave a very instructive talk, his subject being, "The Present Status of Vaccine and Serum

Therapy, the Modern Treatment of Cerebral Syphilis and Complications, and the Diagnosis of Diseases of the Blood with Microscopic Slides."

A. W. PRESTON, Secretary.

#### BOOK REVIEWS

**Diseases of Children.** By Benjamin Knox Rachford. Published by D. Appleton & Co., London, Eng., and New York. Price \$6.

This volume is pre-eminently practical. The author emphasizes the therapy of disease, passing quickly over its etiological and pathological factors. Scarcely a condition of childhood is left untouched. Modern methods of diagnosis are ably discussed. Especially to be commended are the chapters on childhood in general, and on infant feeding. This book deserves to become a working manual for the general practitioner. R. L. A.

**Hygiene and Sanitation.** A Text-Book for Nurses.

By George M. Price, M. D., Director, Joint Board of Sanitary Control; Director of Investigation, New York State Factory Commission. 12mo., 236 pages. Cloth, \$1.50, net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

An excellent little treatise on a subject especially important to nurses interested in public health or school work. It is clearly and concisely written, and the different chapters with their various subdivisions are well arranged, rendering it a valuable book for reference. Agnes Walker.

**Practical Medicine Series, 1913. Vol. V. Pediatrics,** edited by Isaac A. Abt, M. D. Orthopedic Surgery, edited by John Ridlon, M. D.

Serotherapy in hemorrhage is advocated, but not quite as enthusiastically as the late literature would warrant. The much mooted questions of the desirability or otherwise of feeding infants with Pasteurized and with boiled milks; with dried milk and with proprietary foods, is given brief notice. Little that is new can be announced in the field of acute infectious fevers. In fact, the year has thrown apparently little light on the old problems; but the tendency is to improve our statistics with a view to a better understanding of etiology and treatment of the disorders peculiar to infancy and childhood.

Dr. Ridlon's review of the year's work in the orthopedic field is characterized by great force and positiveness which give the charm of sincerity, but seem to denote a partiality that should not be so marked a feature of a work that should be a résumé and a review. Of great interest, however, are the discussions on tubercular joints, scoliosis, congenital hip dislocations and the methods for restoration of function after paralysis. G. H. T.

**Surgery of the Vascular System.** B. M. Bernheim, M. D. Lippincott, Philadelphia, 1913. \$3.00.

The first thing that strikes one looking at this book is the fact that it has the usual Johns Hopkins type of illustrations, which makes it almost unnecessary to read. However, if you do read it you will find some very practical suggestions. One very pertinent paragraph you meet in the introduction—"Brilliant laboratory results achieved in this work have often lured the inexperienced to try their luck, only to find that chance here plays no part and that success is measured only by years of trial, first in the laboratory, then in the clinic." The improvement of the technique of lateral arteriovenous anastomosis is very apparent, and undoubtedly, if followed, will insure a greater percentage of successful operations. S. T. P.

**Practical Medicine Series, 1913.** Vol. VI. General Medicine. Edited by Frank Billings, M. S., M. D., and J. H. Salisbury, A. M., M. D.

The review opens with a very good synopsis of Vaccine Therapy. Blood cultures in fevers of obscure origin are advocated. In typhoid, the prophylactic injections are not mentioned. The emetine treatment of amoebic dysentery is one of the newer things described.

The application of radiography in the diagnosis of diseases of the gastro-intestinal tract is well discussed and illustrated, though the conclusions seem rather more definite than those in the latest literature on this subject.

The chapter on gastric and duodenal ulcer is very complete and quite moderate in the conclusions arrived at.

In considering constipation the reviewers announce their disapproval of the Lane operation and give reasons therefor.

Though the ground covered in this volume has been confined to the acute infections and diseases of the gastro-intestinal tract, liver, pancreas and spleen, there is a great mass of interesting material presented in a very clear and moderate way.

G. H. T.

**Essentials of Prescription Writing.** By Cary Eggleston, M. D., Instructor in Pharmacology, Cornell University Medical College, New York City. 32mo. of 115 pages. W. B. Saunders Company, 1913. Cloth, \$1.00 net. W. B. Saunders Company, Philadelphia, London.

A small duodecimo of a little more than a 100 pages gives the "Essentials of Prescription Writing," concisely and in a very few words. In fact, the writer questions whether a few extra words, and a few more sentences, would not have made the work a little more impressive and a little more interesting. More attention than usual has been paid to the Metric System, and its application. A good and full explanation of the so-called "Standard" prescription and the ease with which it can be applied in converting the average apothecaries' prescription to a metric one is commendable and may be one of the means of making the metric more popular. The chapters on Vehicles, Incompatibilities, Doses, etc., follow only too concisely the usual writings on these subdivisions. All in all it carries out its object—it "Provides the student of medicine with a succinct treatment of the subject of prescription writing." A. L. L.

**Syphilis and the Nervous System.** By Max Nonne. Translated by Ball. Published by Lippincott, Philadelphia, 1913.

The English translation of Ball should bring this valuable second edition into wide use in this country.

More light could have been thrown on the subject of basilar meningitis and its symptomatology in view of much recent work.

In the discussion of polyuria and polydipsia on page 97, of glycosuria and polyuria on page 151 and of diabetes insipidus on page 153 as symptoms of basilar meningitis no explanation for their occurrence of significance is attempted.

For the most part these are all expressions of hypophyseal involvement and may be caused as well by any other lesion as by lues. If the basilar syphilis affects the interpeduncular as is common, the result is the same as if some other growth occurs there.

The chapters on the reactions and on therapy give one a sound working basis which comes with

a sense of relief after the numerous current articles which too often make exaggerated and positive statements based on a few unusual coincidents.

H. C. Naffziger.

**A Clinic Manual of Mental Diseases.** By Francis X. Dercum. W. B. Saunders Co., 1913.

This work of 425 pages deals essentially with the clinical aspect of mental disease and presents in concise form the views of the well-known Philadelphia neurologist and psychiatrist. There is something refreshingly personal in the author's presentation of his subject, and this, together with a rather unusual classification, gives the work a distinctive character. For the practising physician Dercum believes that the understanding of mental disease will be made more easy by the aid of internal medicine than by psychologic interpretation, and following this opinion prominence is given in Part III of the work to a chapter on "The Clinical Forms of Mental Disease Related to the Somatic Affections" and a second chapter on "Mental Disease Related to Age." For the group of mental states commonly designated as Psychasthenias Dercum proposes the term "Neurasthenic-Neuropathic Insanities," intending to convey by this expression the condition as he sees it: neuropathy plus nervous exhaustion. The Freudian sexual theory is discussed at some length but does not meet with the approval of the author, although the importance of buried symptoms complexes in the etiology of abnormal mental states is admitted. The final chapter takes up the question of treatment, extra mural as well as intra mural treatment being considered. Prophylactic treatment in children suffering from neuropathic heredity is considered of prime importance. The need of a psychopathic hospital for acute cases in every large city is emphasized.

W. F. S.

**Surgery of the Eye. A Hand-book for Students and Practitioners.** By Ervin Török, M. D., Surgeon to the New York Ophthalmic and Aural Institute; Ophthalmic Surgeon to Beth Israel Hospital; Consulting Ophthalmologist to the Tarrytown Hospital, and Gerald H. Grout, M. D., Assistant Surgeon to the New York Ophthalmic and Aural Institute; Instructor in the Eye Department, Vanderbilt Clinic; Consulting Ophthalmologist to the Bellevue Hospital, First Division. Octavo, 507 pages, with 509 original illustrations, 101 in colors, and 2 colored plates. Cloth, \$4.50, net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

After looking through this handy volume, one feels inclined to agree on the whole with Dr. Arnold Knapp's impression—given in a one-page introduction to the work—that the arrangement of the subject matter is simple and practical and the text clear and brief. Of the wealth of illustrations, the clear and numerous cuts of instruments distributed freely throughout the text would seem to be an especially serviceable arrangement for the beginner. We cannot grant the same commendation, however, to many of the liberally given illustrations of the operative procedures, especially amongst the photographs. In far too many of the latter, purporting to give details of technic, the main *raison d'être* of the illustration, the bulbous itself, is so indistinct and small as to be absolutely without any real meaning to the reader not already familiar with the procedure. Instead of packing the volume with such photographs, purporting to aid the student, it would seem to us that a future edition of the book, as an elementary treatise, would gain decidedly by the use of prominent



type in emphasizing certain phases of the operation and especially in calling attention to the fatal risk so largely lurking in capital operations of the bulbous. The numerous good and instructive diagrammatic illustrations are a distinctive feature of the book. Size and get up deserve nothing but praise; especially commendable in an ophthalmological work is the large and clear type. N.

**Erinnerungen und Betrachtungen.** Prof. Dr. Heinrich Fritsch. A. Marcus & Co., Weber's Verlag, Bonn, 1913.

The book contains the reminiscences and observations of the well-known veteran German Gynecologist, Heinrich Fritsch, who participated in the Franco-Prussian war of 1870-71 in the capacity of volunteer surgeon, and as such witnessed many engagements of the contesting armies.

We are accustomed to look upon Germany as one of the most progressive countries and as one of the foremost exponents of medicine as a science and art. But while the organization and preparation of the Prussian fighting forces were admirable, we are told by Fritsch that the sanitary measures of the army were, in the beginning of the war, obsolete and totally inefficient. The soldiers' food was qualitatively and quantitatively poor and provisions for good drinking-water were inadequate. Thus the German soldier was, especially at the onset of the cold season, exposed to untold misery. Scant or no provision was made for the care of the wounded after decisive battles. As proof of this Fritsch graphically relates how he was, after the sanguinary battle of Gravelotte, left alone at night in a forest with a large number of wounded soldiers, without water or any means of transportation. Finally he succeeded in having a large number of the gravest cases removed on most rudimentarily improvised stretchers. One of the men, carried in this fashion through the dark forest, died on the road. Before reaching the field-hospital the cortege was in danger of losing more men by being fired upon from their own outposts.

The German army-surgeon, who is still looked upon as a negligible quantity by the commissioned officer, had constantly to advance to the firing line during battles and work amid flying bullets. Probably less dangerous, but certainly more arduous, were his duties in the field-hospital. Surgery was still in its preantiseptic or rather preaseptic era and the majority of soldiers, therefore, were hopelessly sick from blood-poison. One chill was followed by another and uncontrollable hemorrhages precipitated the invariably fatal outcome. Physicians were scarce and those in authority, in many instances, incapable or too old. Fritsch himself who had resigned his assistantship in a gynecological clinic to join the army, keenly felt his lack of surgical training. Left to his own resources and almost alone in charge of a large hospital of over 200 beds, into which regularly over night 20 to 30 new cases were "dumped," which in most instances died without an attempt at a diagnosis, he was often overwhelmed by the weight of his responsibility and at times unhappy and inconsolable on account of his poor therapeutic results. For all the misery caused by chills, blood-poison, hemorrhages, etc., he had, as he puts it, nothing more to offer than the morphin-syringe and his tears.

Fritsch rides through the enemy's country with open eyes, and, while performing his duties with zeal and self-sacrifice, he finds time and opportunity for his observations on the beautiful natural scenery of southeastern France, on camp-life and on many interesting episodes of the great struggle; he gives fascinating descriptions of battles, reliable contributions upon our knowledge of France and

her inhabitants and discusses here and there many questions of medical import. Everywhere the author's good judgment and sound criticism are apparent in the book, the perusal of which will prove to old and young physicians alike, profitable and delightful. M. K.

**The Protein Split Products in Relation to Immunity and Disease.** By Victor C. Vaughan, M. D., LL. D., Dean of the Department of Medicine and Surgery of the University of Michigan, Victor C. Vaughan, Jr., M. D., A. B., in charge of the Tuberculosis Work of the Detroit Board of Health and J. Walter Vaughan, M. D., A. B., junior attending Surgeon to Harper Hospital, Detroit. 12mo, 476 pages, illustrated. Cloth, \$3.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

A majority of the popular medical writings of a decade add but a trifle to the common store of knowledge, and, as a rule, they do little more than reveal what was already sufficiently obvious. This is to be practical. It is a way the age has, apparently, of compounding with its natural limitations. Fortunately, from time to time a book appears which is in vigorous contrast to the uniform monotony of its contemporaries, and, because it gives a more intimate and distinct view of nature, it irresistibly impels thought into new fields. The verdict of time probably will award this merit to Vaughan's work on the protein poison. At any rate, it may be doubted whether, in recent years, an equally solid and scholarly contribution to medical science has appeared. It is a credit in every way to American research.

single sentence in the highly significant preface: "The cell is not the unit of life; life is molecular." As one may correctly infer from this, the mode of treatment throughout is essentially chemical. And it is of the highest quality. The principal argument is based upon an impressive body of experimental data, the results of fifteen years' work, and a prodigious amount of labor has been expended in the pertinent literature. This is a combination, admittedly, which entitles one to write with the seal of authority. The authors have, however, in no instance exceeded in statement what was well justified by ascertained fact. The reasoning, of necessity, is close, but it is also perfectly intelligible. And that is saying a great deal, when it is considered that the problem of anaphylaxis, which, hitherto, has been "invested with all the sublimity that obscurity can bestow," is analyzed with ability of a high order. They plead for a greatly simplified conception of the mechanism of immunity.

In great part their data were derived from bulk analyses of various bacteria. It was not unusual, for example, to employ 500 grams of dried tubercle bacilli at a single experiment. These huge masses of bacteria, or "particulate proteins," as they are designated, they hydrolyzed, and afterwards studied the biological peculiarities of the cleavage products. Owing to its wide scope, it is not possible to discuss the work in detail; one or two facts must suffice. They were unable to detect cellulose. This of itself is surprising. But in all protein substances examined by them, bacterial or other, from the typhoid bacillus or egg-white, they found a common, central non-specific poison nucleus. This is known as the Vaughan poison. The lethal dose is half a milligram. Undoubtedly, in many biological reactions, this poison is a highly important factor. It is non-diffusible, and, therefore, when released, as it must be, in the peptic cleavage of protein, it usually is innocuous. In the parenteral digestion of a foreign protein, on the contrary, this poison is set free in the tissues where it is potent for harm.

These facts are profoundly significant in the phenomena of sensitization.

The relation of the protein poison to the configuration of the parent molecule is of course unknown. We do not approach that problem at all. But the constructive studies of Fischer in the synthesis of the polypeptids, and these later analytical studies of Vaughan in the hydrolytic cleavage of native proteins suggest that the thermal relations of the atoms (heats of formation and dissociation; latent or other), may at the last prove to be of paramount importance. At any rate, the energy factor appears steadily to elbow its way into prominence.

The chapters on parenteral digestion and protein fever should be read by all who would keep abreast of modern thought, and no man who uses vaccines frequently can afford to be without this book. The authors are opposed to the use of tuberculin in the treatment of advanced tuberculosis.

C. Q.

#### UNUSUALLY LARGE BABY.

Mrs. L.— was due to be confined October 15, 1913. She menstruated last Jan. 12, 1913. She was taken in labor at 2 a. m. November 7. I was called 4 a. m. and recognized a breech presentation. The second stage of labor began at 10 a. m. Pains being hard and no engagement at the time, after two hours counsel was called and it was decided, after careful examination, that the child could not be born alive, naturally. She was taken to the Enloe Hospital and Caesarian section performed by Drs. N. T. Enloe, Ella F. Gatchell and W. B. Johnson. The child was a boy, weighed 18 pounds, measured 23 inches in length, leg  $9\frac{1}{2}$  inches long, arm  $7\frac{1}{2}$  inches long, circumference of chest 17 inches, circumference of head 15 inches. The convalescence was uneventful. The mother and boy returned home November 17, the wound entirely healed and the mother as well as following a normal labor. The mother weighs 130 pounds, the father 160 pounds. I can vouch for all these weights and measures.

Ella F. Gatchell.

#### ARMY MEDICAL CORPS EXAMINATIONS.

The Surgeon-General of the Army announces that preliminary examinations for appointment of First Lieutenants in the Army Medical Corps will be held on January 19, 1914, at points to be hereafter designated.

Full information concerning these examinations can be procured upon application to the "Surgeon-General, U. S. Army, Washington, D. C." The essential requirements to secure an invitation are that the applicant shall be a citizen of the United States, shall be between 22 and 30 years of age, a graduate of a medical school legally authorized to confer the degree of Doctor of Medicine, shall be of good moral character and habits, and shall have had at least one year's hospital training as an interne, after graduation. The examinations will be held simultaneously throughout the country at points where boards can be convened. Due consideration will be given to localities from which applications are received, in order to lessen the traveling expenses of applicants as much as possible.

In order to perfect all necessary arrangements for the examinations, applications must be completed and in possession of the Adjutant-General at least three weeks before the date of examination. Early attention is therefore enjoined upon all intending applicants. There are at present twenty-six vacancies in the Medical Corps of the Army.

#### NEW AND NONOFFICIAL REMEDIES.

Since publication of New and Non-Official Remedies, 1913, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

**Agglutinating Sera for Diagnostic Purposes.**—These are the sera of animals (horses) immunized against various bacteria. For use a solution is added to a suspension of the bacterium to be tested, and after incubation for a certain period the mixture is examined.

**Agglutinating Serum for the Identification of Bacillus Paratyphosus A.**—Intended for use by the macroscopic method. H. K. Mulford Co., Philadelphia, Pa.

**Agglutinating Serum for the Identification of Bacillus Paratyphosus B.**—Intended for use by the macroscopic method. H. K. Mulford Co., Philadelphia, Pa.

**Agglutinating Serum for the Identification of Bacillus Typhosus.**—Intended for use by the macroscopic method. H. K. Mulford Co., Philadelphia, Pa. (Jour. A. M. A., Nov. 1, 1913, p. 1630).

**Antistreptococcic Vaccine (Scarlatina Prophylactic).**—For description of Streptococcus Vaccine see N. N. R., 1913, p. 226. The Abbott Alkaloidal Co., Chicago.

**Strepto-Bacterin (Scarlatina Bacterin) Polyvalent.**—For description of Streptococcus Vaccine see N. N. R., 1913, p. 226. The Abbott Alkaloidal Co., Chicago (Jour. A. M. A., Nov. 15, 1913, p. 1811).

**Silk Peptone "Hoechst."**—Peptone made from silk and standardized to a uniform rotatory power. It is used for the detection of peptolytic ferments, either by changes in optical activity or by the precipitation of tyrosin produced by its digestion. Farbwerke Hoechst Co., New York (Jour. A. M. A., Nov. 15, 1913, p. 1811).

**Acne-Bacterin Polyvalent.**—For description of Acne Vaccine see N. N. R., 1913, p. 221. Abbott Alkaloidal Co., Chicago.

**Coli-Bacterin Polyvalent.**—For description of Bacillus Coli Vaccine see N. N. R., 1913, p. 221. Abbott Alkaloidal Co., Chicago.

**Friedlander Bacterin Polyvalent.**—For description of Friedlander Vaccine see N. N. R., 1913, p. 222. Abbott Alkaloidal Co., Chicago.

**Gonococcus-Bacterin Polyvalent.**—For description of Gonococcus Vaccine see N. N. R., 1913, p. 223. Abbott Alkaloidal Co., Chicago.

**Pneumo-Bacterin Polyvalent.**—For description of Pneumococcus Vaccine see N. N. R., 1913, p. 224. Abbott Alkaloidal Co., Chicago.

**Staphylo-Acne-Bacterin Polyvalent.**—For description of mixed vaccines see N. N. R., 1913, p. 224. Abbott Alkaloidal Co., Chicago.

**Staphylo-Albus-Bacterin Polyvalent.**—Abbott Alkaloidal Co., Chicago.

**Staphylo-Bacterins (Human) Albus-Aureus-Citkaloidal Co., Chicago.**

**Staphylo-Bacterins (Human) Albus-Aureus-Citreus.**—For description of Staphylococcus Vaccines see N. N. R., 1913, p. 225. Abbott Alkaloidal Co., Chicago.

**Strepto-Bacterin (Scarlatina Bacterin) Polyvalent.**—Abbott Alkaloidal Co., Chicago.

**Antistreptococcic Vaccine (Scarlatina Prophylactic).**—Abbott Alkaloidal Co., Chicago.

**Strepto-Bacterin (Human) Polyvalent.**—For description of Streptococcus Vaccines see N. N. R., 1913, p. 226. Abbott Alkaloidal Co., Chicago.

**Typho-Bacterin Polyvalent.**—Abbott Alkaloidal Co., Chicago.

**Typhoid Prophylactic.**—For description of Typhoid Vaccine see N. N. R., 1913, p. 227. Abbott Alkaloidal Co., Chicago (Jour. A. M. A., Nov. 22, 1913, p. 1900).

**Arheol.**—Arheol is santalol, the chief constituent of sandalwood. Its action is the same as that of sandalwood oil, but is claimed not to cause dis-

turbance of the stomach or the kidneys. Arheol is marketed only in the form of Arheol Capsules, 0.2 Gm. Alexandre Astier, Paris, France (Jour. A. M. A., Nov. 22, 1913, p. 1900).

Gluten Food A, Barker's.—A wheat-gluten flour, containing not more than 4 per cent. of carbohydrates and 87 per cent. protein.

Gluten Food B, Barker's.—A wheat-gluten flour, containing not more than 7 per cent. carbohydrates and 85 per cent. protein.

Gluten Food C, Barker's.—A wheat-gluten flour, containing not more than 12 per cent. of carbohydrates and 83 per cent. protein.

Barker's gluten foods are indicated when a practically starch-free diet is desired, particularly in most forms of diabetes. It can be taken uncooked or made into muffins. Herman Barker, Somerville, Mass. (Jour. A. M. A., Sept. 27, 1913, p. 1042).

Acne Bacterin Polyvalent.—For description of Acne Vaccine see N. N. R., 1913, p. 221. Abbott Alkaloidal Co., Chicago.

Coli-Bacterin Polyvalent.—For description of Bacillus Coli Vaccine see N. N. R., 1913, p. 221. Abbott Alkaloidal Co., Chicago.

Friedlander-Bacterin Polyvalent.—For description of Friedlander Vaccine see N. N. R., 1913, p. 222. Abbott Alkaloidal Co., Chicago.

Gonococcus-Bacterin Polyvalent.—For description of Gonococcus Vaccine see N. N. R., 1913, p. 223. Abbott Alkaloidal Co., Chicago.

Pneumo-Bacterin Polyvalent.—For description of Pneumococcus Vaccine see N. N. R., 1913, p. 224. Abbott Alkaloidal Co., Chicago.

Staphylo-Acne-Bacterin Polyvalent.—For description of mixed vaccines see N. N. R., 1913, p. 224. Abbott Alkaloidal Co., Chicago.

Staphylo-Albus-Bacterin Polyvalent.—Abbott Alkaloidal Co., Chicago.

Staphylo-Aureus-Bacterin Polyvalent.—Abbott Alkaloidal Co., Chicago.

Staphylo-Bacterins (Human) Albus-Aureus-Citreus.—For description of Staphylococcus Vaccines see N. N. R., 1913, p. 225. Abbott Alkaloidal Co., Chicago.

Strepto-Bacterins (Human).—For description of Streptococcus Vaccines see N. N. R., 1913, p. 226. Abbott Alkaloidal Co., Chicago.

Typho-Bacterin Polyvalent.—Abbott Alkaloidal Co., Chicago.

Typhoid Prophylactic.—For description of Typhoid Vaccine see N. N. R., 1913, p. 227. Abbott Alkaloidal Co., Chicago (Jour. A. M. A., Oct. 4, 1913, p. 1297).

Ninhydrin.—Ninhydrin is triketohydrindenhydrate a derivative of inden. Colorless crystals, readily soluble in water. The aqueous solution gives a blue color on boiling with protein bodies or amino acids derived from them, which have the amino group in the alpha position. Ninhydrin is used in the diagnosis of pregnancy according to the method of Abderhalden. Farbwerke-Hoechst Co., New York (Jour. A. M. A., Oct. 11, 1913, p. 1377).

Placentapeptone.—A peptone derived from the placenta. It is used in applying the optical test for pregnancy according to Abderhalden. Farbwerke-Hoechst Co., New York (Jour. A. M. A., Oct. 11, 1913, p. 1377).

Antirabid Vaccine.—It is prepared according to the method of Pasteur and is a complete treatment, consisting of 25 doses, to be administered during 21 days. Schieffelin and Co., New York (Jour. A. M. A., Oct. 11, 1913, p. 1377).

Copper Citrate, Merck.—This salt complies with the standards for copper citrate, N. N. R., Merck & Co., New York (Jour. A. M. A., Oct. 11, 1913, p. 1377).

Transfer of Agency.—The biologic products of the Sophian-Hall-Alexander Laboratories which were accepted for inclusion with N. N. R., are now sold by E. R. Squibb & Sons (Jour. A. M. A., Oct. 11, 1913, p. 1377).

## USE OF HEROIN SPREADING RAPIDLY AMONG DRUG FIENDS.

Washington, D. C.—According to information gathered by the U. S. Department of Agriculture, there has been a sudden and very significant increase in the use by persons with a drug habit of the little-known but very dangerous drug called "heroin." The sales of this drug have recently increased greatly, particularly in those States which have rigid laws preventing the indiscriminate sale of morphine and cocaine. Investigation of the subject establishes the fact that many drug victims who formerly used morphine and cocaine, and who under the new laws find it difficult to obtain these substances, have begun using heroin, the sale of which is not as yet as carefully restricted under state laws. The drug is said to be fully as dangerous as morphine and by many is held to be much worse, for the reason that it occasionally kills the victim outright, and its habit is far harder to overcome than the use of the other drugs. The Department, pending further action, specially warns all people who are unfamiliar with the drug to avoid all preparations containing the substance and to take it only on the prescription of reputable physicians.

Heroin, the consumption of which by drug takers has recently increased so markedly, is a derivative of morphine, the opium alkaloid. It is known in chemical parlance as diacetyl morphine, and it is frequently found as a constituent of a number of proprietary drugs. Its use seems to be especially notable in parts of Pennsylvania. This year the coroner's office in Philadelphia County has held inquests on five sudden deaths from heroin poisoning. In each case the victim was a heroin fiend and was on a heroin debauch and took an overdose. The substance apparently is far more dangerous for drug users than morphine or cocaine. Drug fiends apparently are able to consume relatively large quantities of the other two drugs, but any sudden and material increase in the amount of heroin taken is very liable to prove fatal. As indicating the wide sale of this substance, it is known that one druggist in Pennsylvania whose store was located in an undesirable section of his city has been buying heroin tablets in 25,000 lots.

The labels of proprietary and other medicines purchased by laymen should be carefully scrutinized for a statement which is required by the National Food and Drugs Act of the quantity or proportion of heroin, or any derivative or preparation thereof.

The word "heroin" on any label should be regarded as a danger signal, according to the experts of the Department.

## NEW MEMBERS.

Baldwin, W. I., San Francisco.  
Long, Herbert Everett, San Francisco.  
Wilson, H. P., Whittier, Cal.  
McKellar, Jas. H., Pasadena, Cal.  
Lando, M. E., Oakland, Cal.  
Chilson, Wm. C., Tulare, Cal.  
McClelland, Jas. Hugh, Dos Palos, Cal.  
Mitchell, L. W., Bakersfield, Cal.  
Landis, Chas. C., Chico.

## DEATHS.

Morrison, Jno. McI. (died in Berkeley).  
Meyers, Robt. Chas., San Francisco.  
Campbell, Geo. W., Los Angeles.  
Smith, Harry A., Los Angeles.  
Medlock, J. R., Santa Ana.  
Martinez, Felipe, San Francisco.  
McManus, F. A., Crockett, Cal.  
Taggart, H. W., Redwood City.